Medical
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THE JOURNAL
OF THE
Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

VOL. 34 JANUARY, 1935 No. 1

TANNIC ACID TREATMENT OF BURNS*

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The management of a burn case develops practical and theoretical considerations. Many ideas and outlines of the treatment have been advanced but a review of the literature indicates that the greatest amount of constructive thinking and work along lines of practical therapeutics has been done in the last two decades. Many questions have been raised and it is obvious that there still remain problems for further research before we can agree on any standard form of treatment.[4] As stated by Aldrich,[1] "Each new trend in medical progress has had some effect on the general ideas concerning burns. These new ideas were plausible at the time, but when subjected to careful analysis and experimentation, fell into disuse or were clung to out of habit or lack of a better substitute."

The responsibility entrusted to the physician treating a severe burn is not always fully realized nor appreciated by the patient or family. Statistics[3] show that 45 per cent of the lethal burns occurring annually in the United States are in children under six years of age and in this group the outcome is often out of proportion to the severity and extent of the apparent damage done. At the Children's Hospital, where 493 cases (Chart I) were studied, the greatest number fell in the age group 1 to 3 years (Chart II). Since the introduction of the tannic acid treatment by Davidson[2] in 1925, a form of procedure in the care of the burn case has been established and generally adopted. The advantages of this treatment and the results obtained by its use have been emphasized in a number of published reports.[6,7,8]

The work of the late Dr. Edward C. Davidson was a great contribution to medical science and it is with pride that we in Michigan refer to the results of his laboratory and clinical research. His work has also had its effect in stimulating others to perfect methods of technic in the treatment of burns which would assist in reducing the mortality. In regard to the use of tannic acid as a form of treatment, Wells in a recent publication makes the following state-

CHART I. CASES LISTED ACCORDING TO ETIOLOGY
TOTALS FOR AN ELEVEN YEAR PERIOD

Burned by hot fluids (spilling hot liquids from table or stove, stepping or falling in hot water)	269	(54.6%)
Fire (bonfire, stove, gas heater, gasoline, etc.)	101	(20.5%)
Fire (result of playing with matches)	41	(8.3%)
Chemicals	31	(6.3%)
Not stated	51	(10.3%)
Total number of cases	493	
Considered avoidable	398	(80.73%)
Considered unavoidable	44	(8.93%)
Not stated	51	(10.34%)
Total	493	

*From the Surgical Service of the Children's Hospital of Michigan. Read before the surgical section, Michigan State Medical Society, September 12, 1934. Illustrated by a motion picture film.

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ment: "The introduction of tannic acid by Davidson in 1925 has revolutionized and apparently for the first time in history

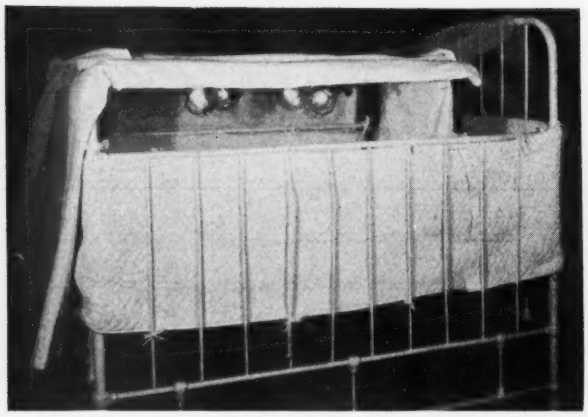
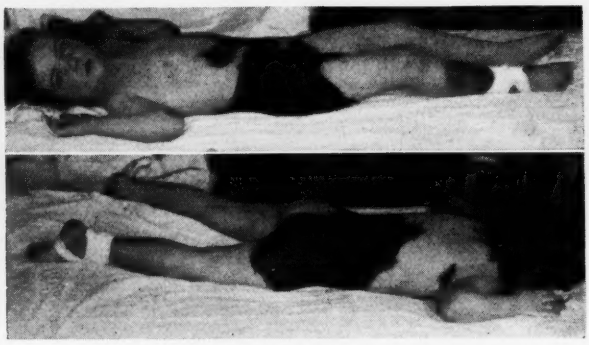


Fig. 1. Light tent used in treatment of patients admitted in shock.

standardized the treatment of diffuse burns."

The early symptoms following a burn are primarily those of shock with a profound disturbance of the circulatory and heat regulating mechanism, and, in all probability, equally serious interference with many other normal functions of the body. The larger the area involved, the greater are the number of nerve endings and neurons irritated, resulting in a greater degree of shock. It has been shown by the experimental work of Doctor Davidson that a burn causes a marked depression in blood chlorides, that the toxemia accompanying a burn is due to a toxic agent which originates at the site of the burn, that the absorption of this agent is responsible for the constitutional reaction, that the local destruction of tissue is due to a proteid substance with the subsequent formation of a proteose, and, finally, that the latter is the toxic element in burns.

Tannic acid is a non-nitrogenous amorphous powder readily soluble in water, glycerine and alcohol but insoluble in ether and chloroform. It precipitates proteins, alkaloids, some glucosides and the salts of heavy metals. It forms a more or less stable compound with the protein constituents of the body fluids and cells, thereby preventing the loss of body fluid at the site of the burn. The astringent effect appears to be limited to the superficial layers of tissue. The precipitated proteins on the surfaces treated prevent and minimize the absorption of the autolytic products of protein decomposition. In addition, the precipitated proteins provide a protective coating and a mechanical action against sensory and inflammatory irritation. It is used with the idea of precipitating the toxic elements in the burned tissue, thereby preventing their absorption. Tannic acid is used as a 5 per cent aqueous solution freshly



Figs. 2 and 3. E. D., aged four years, fell into a brush fire. She was admitted to the Children's Hospital March 5, 1932, one hour after the accident, in shock. The patient had second and third degree burns of the right half of the body from axilla to hip, left lumbar region and both arms. She was treated with 5 per cent tannic acid spray, hypordermoclysis and three blood transfusions. Skin graft was done in two stages, using pinch grafts. The patient expired following twenty-four days in the hospital.

Fig. 4. P. McN., aged four years, was burned playing with matches. She entered the Children's Hospital March 1, 1934, one-half hour after the accident. The patient had second and third degree burns of the abdomen, back, vulva, upper thighs and buttocks. One-third of the body surface was involved. She was treated with 5 per cent tannic acid spray and multiple blood transfusions. Skin grafting with Reverdin grafts was done in five stages. The burned surface was entirely healed without contractures and the patient was discharged June 12, 1934.

prepared and applied to the burned area by a De Vilbiss spray. A burn when exposed to the air is very painful and the earlier it is covered with tannic acid the degree of pain and shock will be greatly diminished.

The treatment of burns is best carried out in the hospital. Patients admitted in shock can be put in a light tent (Fig. 1) or the heat may be applied in another way by an electrically heated blanket or many hot water bottles placed about the patient. Morphine or codeine should be given freely for the pain. This allows the patient to rest the first night and having had this rest he is bet-

CHART II. AGE INCIDENCE FOR AN ELEVEN YEAR PERIOD

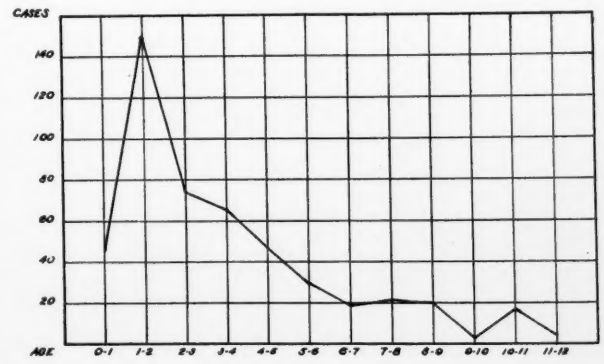
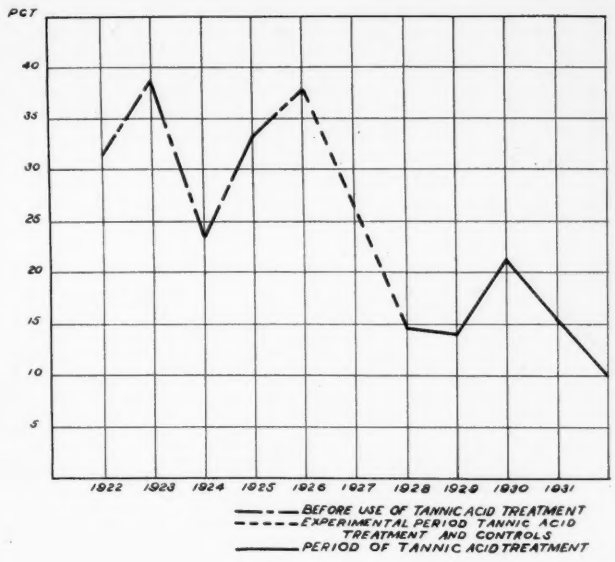


CHART III. MORTALITY CURVE



ter fitted to take the forcing of fluids the following day. For the more severe burns saline should be given by hypodermoclysis or intravenously with glucose as the needs indicate. In addition blood transfusion and this repeated as often as indicated.

The local treatment of burns depends to a large extent upon the experience of the surgical staff. The general rule, however, is to wash the acid and alkali burns with water before applying the neutralizing agent and to remove all devitalized superficial tissue, as well as opening and draining the blisters with as little trauma as possible. The patient is then placed in a light tent upon a sterile sheet and the tannic acid spray started by the nurse. The burned area is sprayed every fifteen minutes for the first four to six hours. The time required for this spraying depends upon the depth of the burn and the reaction of the tissues to the tannic acid. It is our practice to use the tannic acid jel for burns of the face. The first application of the tannic acid gives the patient relief from pain and as the precipitate increases it becomes black and hard (Figs. 2, 3 and 4), giving a firm covering to the burned area and a protection against

Fig. 5. S. C., eleven years old, was burned when throwing kerosene on the fire. He was admitted to the Children's Hospital, October 17, 1931, with second degree burn involving the right side of the face, right forearms and lower half of the right arm. Tannic acid jel was applied to the face and 5 per cent tannic acid spray to the arm and forearm. The patient made a complete recovery and was discharged from the hospital November 5, 1931.

infection which is a distinct advantage. As the epithelium regenerates, the coagulum or tannic leathery coat curls up at the edges (Fig. 5). It has been found in our use of the tannic acid in the treatment of burns in children that the mortality has been reduced from 36 per cent to 10 per cent (Chart III). These figures compare very favorably with those reported from other clinics.

The treatment of any burn case becomes an individual problem, but, to insure the best end-result, requires strict adherence to the accepted principles of treatment as proposed by Davidson and others. This treatment in the majority of cases should reduce the mortality and assist in preventing the unfortunate occurrence of many complications. Prompt application of local treatment,[5] proper supportive measures, follow-up care and attention together with early skin graft-

ing along with the correction of deformities offers a reasonable hope for success.

Summary

1. Burns have carried a high mortality and are best treated in the hospital. The standardization in the treatment of diffuse burns by the use of tannic acid has materially reduced the mortality and this contribution by Doctor Davidson to the subject has resulted in the saving of many lives.

2. Washing the chemical burns with water is essential before applying the neutralizing agent.

3. Proper first aid followed by early hospitalization and aseptically cleansing the burned area is important.

4. The tannic acid method of treatment, combined with the light tent, is effective and helps to simplify the treatment of a condition that can tax the patience, time and resources of the attending physician to the utmost.

5. The forcing of fluids and giving saline, either subcutaneously or intravenously, and blood transfusion are necessary to carry the patient through the acute period of toxemia.

6. Early skin grafting of the third degree lesions will minimize the amount of scarring and deformity. It will also lessen the period of morbidity and disability.

7. The severe burn case often requires subsequent plastic surgery to improve the function of an extremity or better the cosmetic result.

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UTERINE FIBROIDS: THE IMPORTANCE OF DIAGNOSTIC CURETTAGE IN THEIR MANAGEMENT*

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Our aim in presenting this paper is to emphasize diagnostic curettage as an important adjunct in the treatment of uterine fibroids which come under clinical attention. The combined occurrence of myomata and cancer of the uterus has been pointed out more than once (See Table 1).

Although the data presented in Table 1 are of scientific interest, their practical value may be questioned. The combined presence of both neoplasias was presumably established by microscopic study, and the table fails to take into consideration those cases clinically diagnosed as uterine fibroids—and so treated—but which later proved to be adenocarcinoma of the uterine body with or without thickening of the myometrium. True, most corpus cancers are not associated with thickening of the myometrium but it occurs often enough to be important and not infrequently it deceives the examiner into thinking he is dealing with a uterine fibroid. As these cases are not ordinarily included in statistical studies it becomes apparent that the data presented in Table 1 do not adequately picture the true relationship between "clinical" uterine fibroids and carcinoma. It is this practical, everyday aspect of the problem with which we are concerned, not the well established incidence of association of these tumors as found in the pathology laboratory.

A review of the records of patients seen in the Gynecology Clinic at the University of Michigan Hospital since July, 1931, re-

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TABLE 1†

Author	Total number of myomatous uteri	Per cent incidence of cancer	
		Corpus	Cervix
Kelly-Cullen	1400 1674	(25 cases) 1.7 per cent	(18 cases) 1 per cent
Noble (composite series)	2274	(43 cases) 1.8 per cent	(16 cases) 0.7 per cent
Noble (personal series)	337	2.6 per cent	1.4 per cent
Winter (composite series)	1270 1607	..... 1.2 per cent	2 per cent
Isbruch	1608	2.45 per cent	
Weibel	1000	2 per cent	
Norris and Vogt	1983	1.2 per cent	
Frankl, O.	1878	0.53 per cent	3.3 per cent
McDonald, E.	700	2.9 per cent	0.8 per cent
Franz, K.	463	1.5 per cent	0.64 per cent

vealed 244 patients with a clinical diagnosis of uterine fibroid. Of this number 102 were admitted to the hospital for treatment. Twelve, or 11.7 per cent, of those admitted for treatment had either a co-existing carcinoma of the uterine body or else a corpus cancer without any fibroid. Since only seven of the twelve had a laparotomy for removal of the lesion the presence or absence of a fibroid could not be microscopically proved in all cases.

Of the seven operated upon five had definite large fibroids, one had a small myoma, and one revealed no fibroid. The other five patients were treated with radiation therapy. Significant we believe is the fact that of the 102 patients with a *"clinical"* diagnosis of uterine fibroids admitted for treatment, twelve, or 11.7 per cent, had adenocarcinoma of the uterine corpus. As has been pointed out, this incidence cannot be compared with the figures in Table 1 since we are dealing here with a practical aspect of the problem, which does not permit such comparison. In all instances a "clinical" diagnosis of uterine fibroid was made. In four the coexistence of a carcinoma was suspected and the presence of a carcinoma was proved in all twelve instances by microscopic examination of the curettings or tissue removed at the time of operation. Because we believe that our findings may be accepted as representing at least average clinical diagnostic ability, we are more than a little bit impressed with the need for diagnostic curettage in the management of these cases, a procedure which has been routine with us in the treatment of uterine fibroids since July, 1931. Our findings force us to disagree emphatically with Martzloff, who states that "curettage as a routine at the time of supravaginal hysterectomy for uterine fibroids has rightfully become almost obsolete."[1] In 1923 Norris and Vogt[2] pointed out that "myomata are the most common uterine neoplasms and their association with uterine cancer is by no means infrequent." In their series of 115 carcinomas of the body of the uterus (reported in 1923) twenty-four were associated with myomata. In 25 per cent of their series (of carcinomas of the uterine body) the clinical diagnosis was that of a benign neoplasm, a fact which strongly supports our contention that diagnostic curettage should be an important preliminary step in the treatment of uterine fibroids.

Since the area of carcinomatous involvement may be small the curettement should be thorough. Office curettage is seldom adequate enough to warrant its advocacy in this connection.

Further analysis of the twelve cases showing adenocarcinoma revealed the youngest to be thirty-eight and the oldest fifty-six years of age. The symptoms were varied,

†From Curtis, Obstetrics and Gynecology, Vol. II, 1933.

some of these cases presenting more than one symptom; ten complained of menorrhagia, five of both irregular and excessive bleeding, and two complained only of an abdominal tumor. Since the fibroid is usually quite obvious, any symptoms which might, under other circumstances, cause one to suspect an associated carcinoma are overlooked or attributed to the benign tumor.

While it is not our intention to discuss the subject of treatment beyond the advisability of preceding any form of therapy with diagnostic curettage, a brief outline of steps taken in the management of these cases at the University Hospital may be of value.

If operative treatment is decided upon these procedures are followed:

1. Diagnostic curettage.
2. Frozen section diagnosis.
3. If no cancer is found conization of the cervix followed by subtotal or total hysterectomy unless myomectomy is indicated.
4. If the curettings reveal the presence of cancer nothing more is done until the patient has received preoperative irradiation treatment, which is followed in five to six weeks by total hysterectomy and bilateral salpingo-oöphorectomy.

If radium is preferred the procedure is as follows:

1. Diagnostic curettage.
2. Frozen section diagnosis or regular two hour tissue preparation.
3. Intrauterine application of properly screened radium.
4. If tissue reveals no cancer the radium is removed on schedule. But if cancer be present the radium is left in for a longer time and followed in five to six weeks by hysterectomy or additional irradiation therapy.

If x-ray is used, a diagnostic curettage is advised as a preliminary step.

Though in some instances it is possible to make a diagnosis of cancer by gross inspection of the curettings it must be remembered that this is a thoroughly unreliable method. Facilities for frozen section diagnosis make curettage particularly helpful. Where this convenience is not available we believe it wiser to defer surgical treatment until suspicious curettings have been studied in the regular way.

One cannot undertake a discussion of this sort without also considering questions which have an important bearing on the subject. Thus it must be admitted that curettage is not always the simple, harmless procedure it appears to be. There are potential dangers which warrant mention. There is always a possibility of tearing the cervix, of spreading infection or disseminating malignant growth, of perforating the uterus and traumatizing adjacent organs or viscera. These are real possibilities, but they seldom occur if the operation is carefully performed by competent hands. Certainly the advantages of curettage as a diagnostic procedure prior to specific treatment in these cases far outweigh its potential dangers.

Like most diagnostic procedures, curettage also is of limited value, for it cannot be relied upon as a diagnostic aid in patients with fibroids undergoing sarcomatous change or even in all cases with an associated adenocarcinoma. These limitations should not, however, forestall its use.

Mention must also be made of routine total hysterectomy. There is much to be said in favor of this procedure, but we cannot agree that it eliminates the need for curettage. There is an increasing tendency among gynecologists to favor irradiation therapy prior to hysterectomy for adenocarcinoma of the uterine body. Consequently, should surgical treatment be carried out for this condition without preliminary irradiation, we may be exposed to the criticism that the patient was not given the best possible treatment. Furthermore, we must not forget the fact that the vast majority of fibroids are treated by surgeons in whose hands total hysterectomy carries with it a distinctly higher morbidity and mortality rate and should therefore be avoided except where the existing pathology warrants this increased hazard.

Finally, it must be remembered that, while surgery is among gynecologists the preferred method of treatment for fibroids there is, nevertheless, a growing inclination in many communities to treat these tumors by means of irradiation therapy. In properly selected cases this form of treatment is successful. Yet there exists a greater likelihood of overlooking a co-existing adenocarcinoma. This is particularly true when x-ray is utilized because it can be given so conveniently and without an an-

esthetic or need for hospitalization. The claim that a co-existing carcinoma will show up later and can then be treated is scarcely valid, since the valuable time lost may prove an insurmountable obstacle to ultimate cure.

Bearing in mind the frequent association of malignancy of the uterus and uterine fibroids and the uncertainty of diagnosis from the clinical picture alone, we believe it imperative that a diagnostic curettage precede all forms of treatment for uterine fibroids. By so doing the physician will be better guided in the treatment of his patient and injudicious radiation therapy or unnecessary radical pelvic surgery will be minimized.

Conclusions

1. Age, pelvic findings, and type of abnormal bleeding are seldom sufficient to permit a clinical diagnosis of adenocarcinoma associated with uterine fibroids.
2. The co-existence of adenocarcinoma and uterine fibroids is sufficiently common to make it of considerable clinical importance.
3. Surgical or radiation treatment of uterine fibroids should always be preceded by careful diagnostic curettage.

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MALIGNANT NEUTROPENIA: ITS ETIOLOGY AND TREATMENT*

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Because of the confusion which has arisen as to the etiology of malignant neutropenia in the recent literature, as well as the diversity of treatment of the condition, this study of the various etiological factors which have been suggested, and also the different treatments which have been used, is presented.

The title is synonymous with the accompanying various terminations which have been given by different authors.

VARIOUS TERMINATIONS BY AUTHORS

Agranulocytosis	Schultz
Agranulocytic angina	Friedman
Malignant neutropenia	Schilling
Agranulocytosis septicemia simplex	Jasse
Hypogranulocytosis	Connor, etc.
Idiopathic neutropenia	Balbridge, Needles
Mucusitis necroticans agranulocytica	J. Weiss
Agranulosis	Brooks
Pernicious leukopenia	Fitz-Hugh
Granulopenia	H. Harkin
Granulocytopenia	H. Harkin

It is a condition characterized by an acute onset of marked malaise, prostration, weakness and high fever which may or may not be accompanied by ulcerative and gangrenous angina of the buccal mucosa, and occasionally is associated with ulcerations and gangrene of other mucous membrane and skin. It always shows a partial or total leukopenia accompanied by absence of polymorphonuclears.

The following classification covers all the various etiological factors that have been presented in the literature:

A. Unknown
B. Chemicals and Drugs
C. Bacterial and Protozoan (Acute and Chronic)
D. Allergic
E. Embryonic
F. Biological
G. Physical
H. Incidental
I. Endocrine
J. Experimental

Under "Unknown" must be placed the malignant neutropenia which was first described by Schultz in 1922.

Under "Chemicals and Drugs" must be placed the pictures of depressed white blood cells with lowering or absence of the

*Read before the Section in Medicine, 114th Annual Meeting, Michigan State Medical Society, Battle Creek, September, 1934.

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leukocytes which occurs in people exposed to benzol, hydrocarbon, and trinitrotoluene, and also the cases that occurred following the treatment of some condition with arsenobenzol, bismuth, bismarsen, amidopyrine, barbital, dinitrophene, and other drugs of that group. These have all been very well described in the literature as definite causes by various authors.

The following have all been described as accompanying or etiological factors: streptococcus of all types, and also unclassified types, staphylococcus albus and aureus, Vincent's spirillum and fusiform bacillus, pneumococcus, Gram-negative and Gram-positive cocci, Gram-negative and Gram-positive bacilli, bacillus coli, bacillus pyocyaneus, bacillus subtillis, meningococcus diphtheria bacillus, and the gas gangrene bacillus.

Acute Vincent's angina, severe local and general sepsis, epidemic influenza, pneumonia, malaria, and meningitis have been accompanied by or followed by this condition.

Malignant neutropenia has developed in individuals while they were under treatment or observation for cholecystitis, cardiac disease, arthritis, intestinal diseases (such as amebic and ulcerative colitis), furunculosis, syphilis, tuberculosis, and carcinoma.

Allergy, particularly asthma, has been reported several times to be one of the causes of malignant neutropenia. One writer has seen the disease following the use of pentnucleotide. A few observers believe that malignant neutropenia occurs as an allergic reaction following pyramidon therapy.

A congenital deficiency of the bone marrow anlage often exists, and a maturation arrest has been described by some authors as the cause of malignant neutropenia.

Biologically, it has followed the use of prophylactic typhoid serum and diphtheria antitoxin.

Physically, it has followed the use of x-ray therapy. Extraction of teeth and fractures of bones, especially skull and leg bones, and other injuries of the bone have been attributed as etiological factors.

The menses and pregnancy have also been described as etiological factors.

The experimental causes, such as benzol, bacillus, pyocyaneus, salmonella suipestifer, and different types of bacteria used in the abdomen and in the blood stream, and drugs of the benzene series have been said to produce malignant neutropenia in the laboratory.

Kracke, in his study of the causes of death from the United States Census Bureau, found that a large percentage of patients who had malignant neutropenia were women, and that a very good percentage occurred among physicians, nurses, relatives of people connected with the medical profession, hospital maids, medical students, and laboratory technicians. In the study presented herein of over seven hundred cases, which includes fifty-nine cases seen by the writer and the remainder from the literature, it was found that about twenty per cent of the patients were from the group closely related to the medical profession. All these fifty-nine patients from the medical profession and others were closely questioned as to the use of drugs which they received as samples and also those prescribed by physicians, and in only one case can the intake of medicines of the benzene series be attributed, and that indirectly, to the etiology, of malignant neutropenia. As a result of this study, in my opinion, malignant neutropenia cannot definitely be attributed to the careless use of drugs.

Because of the multiplicity of etiological factors which are herein given, it is believed that the absolute etiology of the disease is still unknown. In the past experience with other diseases, having a multitude of etiologic factors, an entirely different cause was usually found.

AGE AND SEX INCIDENCE

	Cases in Literature			Private Cases		
Ages	Female	Male	Total	Female	Male	Total
70-80	7	8	15	1	0	1
60-69	51	29	80	2	4	6
50-59	102	35	137	14	4	18
40-49	105	44	149	9	4	13
30-39	96	30	126	5	2	7
20-29	53	33	86	8	2	10
10-19	19	15	34	1	2	3
0- 9	10	9	19	0	1	1
Total cases	443	203	645	40	19	59
Per cent	68.9	31.1	100	67.7	32.3	100

An outline is presented here of the age and sex incidence of six hundred forty-five cases from the literature, plus fifty-nine private cases. As is noted, about two-thirds of

the cases occur in females, the other third being in males, and the most marked incidence is between thirty and sixty years of age.

Several cases in my series developed malignant neutropenia while under observation in the hospital. They were under no drug medication and had not any of the infections mentioned as causes at the time of observation. It is my opinion that when the blood culture was positive, it was a secondary factor rather than the primary cause, due to invasion of a system with a markedly lowered resistance as a result of the absence of the leukocyte.

A questionnaire was mailed to a number of observers and not one of them reported the intake of drugs before the onset of the malignant neutropenia. As substantiating evidence, letters received from heads of large psychiatric institutions report that they have noted no cases of malignant neutropenia develop following the intake of large doses of the barbital group over a long period of time.

A "Clinical Classification of Leukopenias" is presented in an attempt to establish an etiology.

CLINICAL CLASSIFICATION OF LEUKOPENIAS

TYPE I—*Physiological:*
- Digestive (normally, white blood cells and constituents change during the day)
- Storage (spleen, liver, bones, etc.)

TYPE II—*Leukolytic:*
- Exogenous (external noxious agents, *i.e.*, bacterial, chemical, allergic, etc.)
- Endogenous (endocrine, metabolic, or constitutional, allergic)

TYPE III—*Digestive:*
- Increased permeability of leukocytes and their appearance in digestive juices in increasing numbers concurrently with their decrease in blood (seen with pyramidon)

TYPE IV—*Malignant* (Primary bone marrow disease):
- (a) Deficiency
  1. Congenital changes in anlage
  2. Decrease or absence of a necessary substance
- (b) Paralytic
  1. Suppression in formation (maturation arrest)
  2. Suppression in delivery
- (c) Destructive
  1. Congenital changes in anlage
  2. Decrease or absence of a necessary substance
  3. Malignancy
  4. Metastatic bacterial invasion

Under the heading *Physiological,* there is little to say, since it is a commonly accepted fact that the leukocyte level varies at different times of the day under normal conditions.

Under the heading *Leukolytic* the exogenous is caused by external agents, such as bacteria, chemicals, allergy, etc., and the endogenous is caused by endocrine, metabolic constitutional, or allergic changes. These produce a decrease in the peripheral circulation of the white blood cells by their destruction. Examination of the bone marrow reveals no changes and these patients usually improve from their leukopenia.

Under the heading *Digestive* an increased permeability of the leukocytes and their appearance in the digestive juices in increasing numbers occurs concurrently with their decrease in the blood stream. This has been described by Sturgis and his associates of Ann Arbor in their studies with pyramidon in the treatment of rheumatism. They found that in one case treated with 40 grains of pyramidon daily for rheumatism, after a period of about three weeks the white blood count which was done daily began to fall and reached about 2800 with a polymorphonuclear percentage of 48 per cent. As soon as the pyramidon was stopped, the blood count gradually returned to normal.

Under the *Malignant* type, there exists primary bone marrow disease. The first type of this condition is the congenital deficiency due to changes in the anlage of the primary bone marrow cell. These patients have always been ill, and have always shown an atypical blood count. They are the patients who develop the fulminating type of this disease, and do not react to any type of treatment. The other type is characterized by an inability of the primary cell to reproduce because of an absence of a necessary substance. These cases are the ones in whom treatment gives good results.

The second or paralytic type is the type where there is suppression in the formation of the cells. This suppression is due either to a paralysis of the primary reticuloendothelial system or to the lack of some substance such as a hormone that is necessary in the formation of the cell. This is termed a maturation arrest. There also may occur a diminished supply of this substance or hormone which results in a failure of the cell to reach its normal size. The suppression in delivery of the cells is due to a loss

in power of the bone marrow to perform this function. In these cases there is an increased number of white blood cells in the bone marrow and a decreased number in the blood stream.

The third or destructive type is subdivided into three parts. The first two causes are well described under deficiency. The third is caused by an invasion of the bone marrow with malignant cells, destroying the bone marrow, and consequently less or no white blood cells are produced. The fourth is caused by metastatic bacterial invasion of the bone marrow producing a similar destruction. There also may be a gangrene of the bone marrow as a result of a deficient or paralytic bone marrow.

Experimentation may reveal a substance that will stimulate the production of white blood cells in malignant neutropenia in the same manner that *ventriculin* stimulates the production of red blood cells in pernicious anemia.

The apparent best results obtained in the treatment of malignant neutropenia have been through the use of blood transfusions, nucleotides or their derivatives, and x-rays. It is possible that these forms of treatment have the same effect upon the system by giving to it the products of the destroyed nucleus which are necessary in the production of the white blood cell.

In the treatment of malignant neutropenia the following types have been presented in the vast literature:

A. Blood
B. Biological
C. Bacteriological
D. Glandular
E. Physical
F. Chemical
G. General
H. Local

As you note, a great variety of substances have been used. Blood transfusions have been employed very extensively. Both the direct and indirect methods have been used with the whole blood or citrated blood. The blood has been introduced intravenously, intramuscularly, and intraperitoneally. Blood has been injected from the normal healthy individual and from the individual who has apparently recovered from malignant neutropenia. Biologic products, such as nucleinic acid, nucleotide, leukocytic cream, bone marrow, sterile milk and foreign proteins have been found of much value. The bacteriological products that have received favor are typhoid vaccine, bacteriophages, and bacterial serums. The greater percentage of glandular products have been obtained from the liver, fetal and adult spleen, thyroid and the adrenals. The physical forms of treatment have been the x-rays, radium and sterile abscesses. The chemical substances are adenine sulphate, purine base, calcium sulphate, and arsphenamine. The general forms of treatment have been in conjunction with the apparent specific form of therapy with stimulation, intravenous glucose and saline, diet, and locally, the mouth washes, irrigations and oral hygiene.

All these forms of treatment have been employed with success by some investigators and failure by others according to the reports in the literature.

The routine in treatment that I have followed and found to be most successful includes the general and specific forms of therapy that lead to an increase in nuclein or its by-products in the body. General systemic stimulation is given, accompanied by intravenous glucose and saline, mouth washes, irrigations and oral hygiene. A high nuclein diet is given. Small blood transfusions of whole or citrated blood have been most valuable. When there are signs of jaundice or of liver exhaustion, blood transfusions should not be given, as an increased strain on the liver will result in a breaking down of the blood and destruction of the elements. Forty cubic centimeters of whole blood is given intramuscularly twice a day in the same site of injection. The irritation of the muscular tissue probably produces a substance which stimulates the bone marrow. Also, it is of value because a concentrated form of nuclear material is given to the body. Another reason is that possibly a substance exists in the normal blood that is lacking in the individual with malignant neutropenia.

Nucleotide and nucleinic acid are next in importance in the treatment. Nucleinic acid was first used by Dr. Hugo Freund at Harper Hospital, and since that time has been used in form of pentnucleotide extensively with many favorable results. This produces an irritating stimulation and supplies a concentrated form of nuclein to the body to stimulate the production of white blood cells.

Many of the other forms of treatment have been used, but the above have consistently given the favorable results.

In conclusion, the etiology of malignant neutropenia is not in the group of causes listed as offered in the literature. The cause may be a deficiency of some substance that will correspond to ventriculin in pernicious anemia. Drugs, chemicals and bacteria, etc., are secondary factors in the etiology.

In the treatment, the individual should be considered a seriously ill patient. General care and local therapy are very important. Blood transfusions, intramuscular blood and nucleotide are the most valuable assets in the treatment of malignant neutropenia. The cases that recover should receive careful after-care and study over a long period of time.

Bibliography

(The bibliography of this paper includes 767 papers from the literature, which is altogether too long for publication.)

THE MANAGEMENT OF GLAUCOMA*

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When one feels that he has arrived at a point of efficiency where he is able to instruct his colleagues in a management of glaucoma which gives a high percentage of good results, he needs only to review a series of his own glaucoma cases to be convinced that there is yet a great deal to be learned before we can be overly proud of our therapeutic results in this serious condition.

This paper is written with the intention of presenting for your consideration the comparative results of various forms of glaucoma therapy on a limited number of cases seen in our state hospital during the past five years. The records indicate little method in the selection of the cases for the various procedures undertaken; undoubtedly due to the ever changing tendencies in glaucoma management. In a large measure, we may therefore consider the tabulated results as a true comparison of the various forms of glaucoma management used.

Diagnosis

The diagnosis of glaucoma is usually a relatively simple procedure. There is, however, a group of cases which have all the typical signs of glaucoma simplex and yet seldom if ever is an increase in tension recorded during an office visit. Some of the cases which are often placed in this group should not, in my opinion, be classed as glaucoma since they do not at any time present an increase in intra-ocular tension. A recent article by A. Knapp[3] may offer an explanation for some of these cases. Those individuals, however, who do have the transient increases in tension, glaucoma field changes, etc., are often a problem requiring special investigation. Many are explained by taking the tension at various periods during the day and night. Often these patients do not show an elevation in tension except during the early morning hours when they have been sleeping. These cases should receive their miotic during or preceding the time when the tension is elevated if the medical therapy is to be followed. It has been our custom to make these tension studies at the hours of 7-12-4-7 during the day and at 12-4 during the night. Jackson's mydriatic test is also helpful in this group but the patient must be under your constant observation while under the mydriatic.

Social Service of Glaucoma

The necessity of acquainting the glaucoma patient with her condition is often neglected in a busy practice or clinic and as a result these patients are lost sight of till they visit another physician or later return with a much more advanced condition to care for. Most patients are grateful to the doctor who takes the time to inform them of the seriousness and prognosis of glaucoma. With this information they may better see the need of following instructions than if they

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TABLE 1. MANAGEMENT OF GLAUCOMA

	Miotics			Trephines			Iridectomies		
	Glaucoma simplex	Ac. inflam. glaucoma	Chr. inflam. glaucoma	Glaucoma simplex	Ac. inflam. glaucoma	Chr. inflam. glaucoma	Glaucoma simplex	Ac. inflam. glaucoma	Chr. inflam. glaucoma
Number of cases used for study between years 1925-1932	210	5	28	79	2	13	37	6	14
Tension kept within normal limits while under observation	29.0	20.0	3.6	68.3	100.0	38.5	35.1	33.1	28.5
Tension partly reduced—kept normal with miotics	....	....	....	11.4	....	7.7	24.3	....	21.5
Tension controlled—Total per cent	29.0	20.0	3.5	79.7	100.0	46.2	59.4	33.1	50.0
Tension partly reduced but not kept within normal limits with miotics	31.9	20.0	17.8	8.9	....	30.7	29.8	16.9	28.5
Tension persisted in spite of therapy—Per cent	39.1	60.0	28.6	11.4	....	23.1	10.8	50.0	21.5
Tension not controlled—Total per cent	71.0	80.0	96.4	20.3	....	53.8	40.6	66.9	50.0
Average reduction in tension in M. M. Hg. Schiotz	16.0	38.5	15.4	29.0	40.5	39.8	25.4	66.0	34.8
Average duration in months of normal tension without miotics while observed	....	....	....	23.8	6.5	17.3	37.4	3.5	2.5
Average duration in months of normal tension with miotics while observed	15.4	2.5	2.0	20.4	....	6.0	32.9	....	11.6

are not so informed. It is entirely ethical and advisable to establish a follow-up system whereby your patients are reminded when their glaucomatous condition should be reviewed. We are indebted to the late Dr. George Derby for demonstrating the practicability of carrying out this form of social service. The necessity of periodic examinations, even when under control, should be firmly fixed in the patient's mind, since only in that way are we able to be of lasting benefit to them.

Periodic Examinations

The periodic examination should consist of taking the visual acuity, the intra-ocular tension with the tenometer, and the visual fields. Glaucoma fields are of value in determining the degree of general form depression and to note the appearance or progression of Siedel's sign, Bjerrum's scotoma, and the nasal or Ronnè step. A loss in visual acuity, persistence or recurrence of increased intra-ocular tension or progression in the visual field changes, indicates the inadequacy of the present therapy.

Choice of Therapy

In the choice of the therapy for any individual case, our judgment is influenced by many factors. If the patients' intelligence is low, they cannot be trusted to follow miotic therapy as instructed. Surgery here is more reliable. Intelligent patients living relatively near can often be kept under control with miotics for a long time. The intelligent patient whose finances are not sufficient to carry out miotic therapy for the remainder of their life would do better to choose the surgical management. In all events, if surgery is to be contemplated eventually, it is best to resort to it as soon as possible, since surgery gives its best results in early cases.

Medical Management

With glaucosan we have had little experience because of its prohibitive cost. Dependence is placed upon pilocarpin and massage as a routine medical therapy. The efficiency of the miotic therapy is dependent upon the degree of miosis obtained. If a ½% pilocarpin solution produces a maximum of miosis and yet the tension is not re-

duced to normal, stronger miotics have given us no further reduction in tension. Eserin tends to cause ciliary cramp and has a marked tendency to produce a conjunctival reaction after continued use. In some cases this eserin reaction may assume alarming proportions. It is easily overcome by substituting pilocarpin for the eserin, washing the skin of the lids and applying zinc oxide ointment to the involved areas. Tensions in the thirties are usually controlled for a time by 1 per cent pilocarpin while tensions in the forties or above may require 2 per cent pilocarpin. Stronger miotics are seldom advisable for continued use since the threshold of safety is too low. A combination of 1 per cent eserin and 2 per cent pilocarpin may be used in desperate cases for a short time, but it seems best to institute surgery as soon as possible in this latter class.

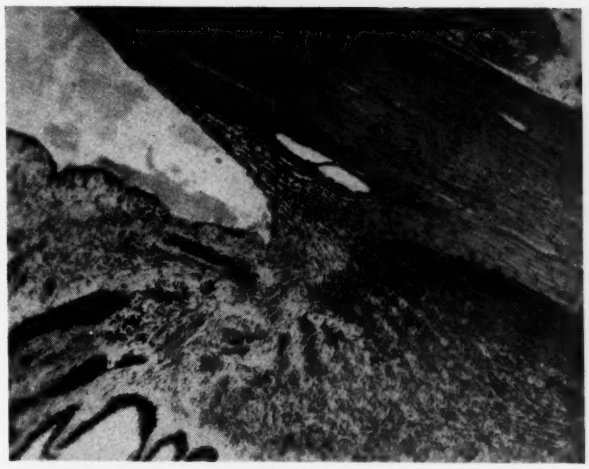

Fig. 1. Photomicrograph of the normal filtration angle. Note the free filtration through the sclero-corneal trabeculum into the canal of Schlemm.

Fig. 2. Incipient Glaucoma. Photomicrograph showing the iris base pushed forward against the sclero-corneal trabeculum, partly but not completely blocking the filtration angle. There is no fibroblastic infiltration from the iris into the trabecular fibers. This is a mechanical blocking which theoretically should be relieved by removal of the iris base by iridectomy. H. and E. X 160.

Surgical Management

In the surgical management of glaucoma, we have many operations from which to choose. Those surgical measures used to temporarily reduce the tension are the posterior sclerotomy and the corneal paracentesis. The former has given us very poor results and the damage to the choroid and retina with hemorrhages into the vitreous have caused the posterior sclerotomy to be considered as an unsurgical procedure in our hands. The corneal paracentesis gives us very good results. The trauma is slight, the decrease in tension is complete and it is therefore very satisfactory as a preliminary to other surgical measures. A paracentesis followed by miotics often allows continued control after acute attacks. We do not use corneal paracentesis except in acute attacks of glaucoma and secondary glaucoma. In secondary glaucoma, corneal paracentesis has its greatest value since the corneal puncture may be repeatedly opened without danger.

The operations for permanent reduction in tension all seem to have a definite place in our surgical management of glaucoma. A review of the pathology of the filtration angle will help us to determine which operation theoretically will give the most permanent results. Incipient glaucoma eyes present no actual adhesion between the iris base and the sclerocorneal trabeculum. There is no destruction of the trabeculum by infiltration with connective tissue from the adjacent iris. It is conceivable that it is this group of cases which would receive lasting benefit from an iridectomy. The operation, however, must be done early in the course of the disease. As the disease advances, the iris base becomes definitely fused with the sclerocorneal angle, fibroblasts proliferate into the trabecular fibers, thus destroying permanently its function of filtration. To remove the base of the iris in these more advanced cases would be of no benefit since it does not open the filtration channels. Here the filtration operations seem to give a higher percentage of good results.

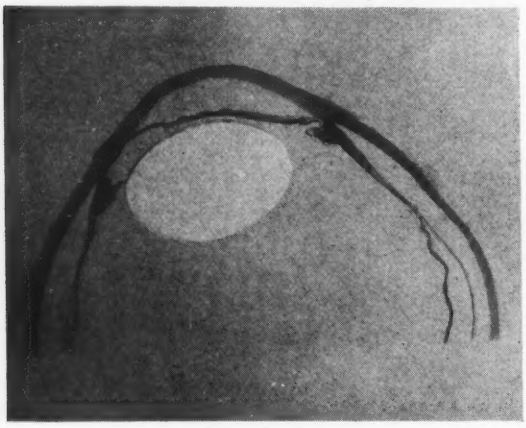

Fig. 3. Photomicrograph of the anterior segment of a globe presenting absolute glaucoma. Iris is atrophic and its base is adherent to the cornea anteriorly. There is definite connective tissue infiltration into the sclero-corneal trabeculum and canal of Schlemm, thus destroying its filtration function. One of the filtration forms of operation is indicated here.

It is impossible to determine clinically the degree of sclerosis of the filtration angle without very specialized apparatus. It is for this reason that we have to exercise our judgment in the operative procedure we contemplate using. We may logically assume that the cases with little field changes and fairly good vision but with an intraocular tension not controlled consistently with miotics are candidates for iridectomy while those showing field changes and loss of vision would do best by one of the filtration operations.

With cyclodialysis we have had little experience. It has been resorted to only where all other methods have failed, and in this respect our experience agrees with the statement recently made by Ellett, that any operative procedure which is undertaken as a last resort is doomed to failure. On the continent, cyclodialysis is being used extensively in those cases where the visual fields show marked encroachment on the fixation area. This group of cases also seem to do well with the iris inclusion operation or iridoencleisis as advocated by Holth[2] and others.[1] Our series of this latter procedure is as yet too small to permit comparison. Those we have performed have, up to the present time, been very satisfactory and have not been accompanied by further field loss post-operatively as so often occurs after the trephine operation in these advanced cases.

Comparative Results with Methods Used

Every ophthalmic surgeon has learned that the immediate results in glaucoma are very misleading. The longer the period of observation after glaucoma surgery the truer will be the conception of the comparative merits of the various operations used. Our past inability to keep track of our glaucomatous patients has not allowed us to give comparative results as regards the average duration of permanent reduction in tension. We may, however, consider a one to three year average observation period as a basis for comparison of temporary control. Only those cases which were observed for at least one month were used in this study.

The comparative results of miotics, trephines, and iridectomies as shown in the table are of little value in acute glaucoma because of the very limited number of cases which could be used for study. The glaucoma simplex cases were controlled by miotics in 29 per cent of cases. These results are in sharp contrast to the strikingly better showing made with the operative management. We consider that operation alone or operation supplemented by miotics should be grouped together in a study of this type as long as they are able to control the tension, etc. We therefore find that 79.7 per cent of the simplex group were controlled by trephine and only 59.4 per cent by iridectomy.

A much poorer showing was made in all forms of therapy when chronic inflammatory glaucoma was reviewed. Miotics alone were of little benefit, only 3.6 per cent of cases being controlled, while trephines controlled 46.2 per cent and iridectomies 50 per cent.

Conclusions

1. The belief that there is no such classification as glaucoma without tension is held. Tension studies will reveal the existence of a transient tension increase at some time of the day or night.

2. A plea is made for instituting a social service follow-up system to protect the glaucoma patient from his own negligence.

3. The choice of therapy depends upon the patient's intelligence, his finances, remoteness from adequate medical care and the state of advancement of the glaucoma itself. In early cases miotics or iridectomy may be sufficient; in late cases some form of filtration operation is indicated.

4. The trephine operation, supplemented by miotics if needed, has given a far higher percentage of glaucoma control in this series than with any other method.

5. Glaucoma simplex cases were controlled by miotics in 29.0 per cent, by trephine in 79.7 per cent, and by iridectomy in 59.4 per cent.

6. Chronic inflammatory glaucoma cases were controlled by miotics in 3.6 per cent, by trephines in 46.2 per cent, and by iridectomy in 50 per cent.

7. The high percentages of poor results through the use of miotics alone (glaucoma simplex 71.0 per cent, chronic inflammatory glaucoma 96.4 per cent) hardly justifies their continued use when the visual fields and vision begin to lose ground.

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SOLITARY INTRAMURAL FIBROMA OF THE PYLORUS

A Case Report

DANIEL J. LEITHAUSER, M.D., F.A.C.S.,† and MEYER O. CANTOR, B.A., M.D.‡
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Small fibromata within the body may cause a very distressing train of symptoms, or may be asymptomatic, dependent upon their site of growth. The asymptomatic fibromata within the body are undiagnosable clinically, being found at operation for some other condition or are noted at autopsy. The moment one of these benign tumors, by its position, interferes with the physiological function of an organ or hollow viscus, then it becomes a diagnostic problem, and often a major one.

The most uncommon benign tumor of the stomach is the intramural solitary fibroma. Many writers seem to doubt the existence of this uncommon tumor type in its pure form. We believe this to be due to the clinician's inability to diagnose these benign tumors at an early period when they are small, as the symptoms and signs are either absent or are not characteristic of any organic gastric lesion. Our case falls into the small group of solitary intramural fibromata of the pylorus. These tumors are found more often in males than in females, and are found chiefly at the pylorus.[2] They are said to have an incidence of 0.1 per cent.

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Pathology—Symptomatology

The small intramural fibromata may be single or multiple, and vary in size to six centimeters, whereas the fibro-myomata and myomata are larger, having been reported weighing two pounds (Blaxland[1]). Myomata or fibro-myomata grow slowly, and usually away from the lumen of the viscus, thus producing no interference with the function of the organ until their size causes a mechanical hindrance to the normal emptying of the stomach. A small fibroma, however, in its

usual location, the pylorus, is prone to cause early pronounced gastric symptoms. Epigastric fullness, belching, and regurgitation are the symptoms which most commonly

Fig. 1. Note the persistent narrowing and lengthening of the pylorus. This was present in the entire series.

occur. When the tumor causes erosion of the gastric mucosa, occult blood will be found in the stool. Achlorhydria is not uncommon in these cases. This finding with the occult blood in an elderly cachectic individual complaining of epigastric distress arouses the clinical suspicion of gastric malignancy. In such cases, the roentgen examination may resemble malignancy so closely as to make the correct diagnosis impossible except by biopsy. A recognition of the fact that a benign gastric lesion may be present is of the greatest importance to the surgeon, as these tumors are often small and their consistency elastic, with the result that palpation of the pylorus at operation may delude one into the error that no lesion was present.

Case Report

W. L., a white man, aged fifty-four, was first seen by one of us (D. J. L.) on January 23, 1933, at which time he complained of a pain in the epigastrium. This distress was first noted six years previously, occurring at times after meals, but without any definite relationship to them. The pain was gnawing in character. Baking soda gave him but slight relief. As time went on the pain occurred with increasing regularity after meals until two years ago, when it occurred regularly one-half hour after each meal. Epigastric fullness and belching were noted at this time. These latter symptoms became increasingly more severe until one year ago. From this time on, he began to regurgitate his food if a normal meal were ingested. He was able to eat

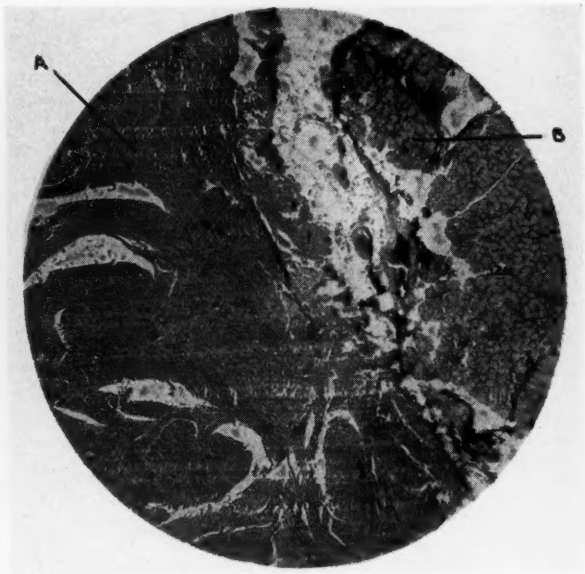

Fig. 2. *A*, Fibrous connective tissue stroma of the fibroma. *B*, Gastric mucosa.

only small amounts at a time, chiefly milk and crackers. He never vomited blood or "coffee-ground" vomitus. During the course of the past year, he lost thirty pounds and became very weak. No tarry or bloody stool was noted at any time.

Examination.—The patient was a poorly nourished, well developed white man. His skin was dry and very loose. Head, neck and chest examinations were negative. There was slight tenderness to deep palpation over the epigastrium. No masses were palpable. No rigidity. Reflexes were normal. Rectal examination was negative. Blood pressure was 128/80. Blood examinations were normal.

Gastric analysis.—No free hydrochloric acid found. No blood. No Boas Apler bacilli. Histamine was not given.

X-ray.—A gastro-intestinal series disclosed some persistent lengthening and narrowing of the pylorus in the entire series. No filling defects were noted. No other abnormalities were noted.

Operation.—Laparotomy was performed on February 4, 1933. There was no visible abnormality in the contour of the stomach or upper duodenum. A definite thickening was noted in the posterior wall of the pylorus. The feel imparted was that of a slight hump about one centimeter in diameter, not well defined. There was no adenopathy. With these findings and a history of epigastric pain, vomiting, and a loss of thirty pounds in a man of middle age, we felt that a gastric resection was the operation of choice. The pylorus and about one-third of the lower end of the stomach was resected. The duodenum was closed and the jejeunum brought through the transverse mesocolon and sutured to the stomach stoma throughout its entire length.

The post-operative course was uneventful. The duodenal tube was kept in place until the sixth day post-operative, after which he was given full fluids. He was discharged from the hospital on the twentieth day.

Gross pathology.—The mass in the posterior wall of the pylorus was not readily detectible. There was no break in the mucous membrane over this mass, nor puckering of the peritoneal surface. On incising the mass a well defined encapsulated tumor one centimeter in diameter and one-half centimeter thick was found.

Microscopic pathology.—The gastric mucosa overlying the well encapsulated tumor mass appeared normal. There was no break in its continuity. There was nothing in the submucosa or underlying tissue to indicate any inflammatory reaction in this region. The tumor itself consisted of a uniformly woven fibrous connective tissue. An examination of Figure 2 shows the microscopic histopathology characteristic of a fibroma of the stomach.

Summary

That pure solitary intramural fibromata of the pylorus do occur is definitely shown. In this case there were no degenerative areas and no indication of previous inflammation or ulcer. This tumor type is very difficult to diagnose pre-operatively, because of its size and consistency. A surgeon who does not suspect its presence may overlook it at the time of operation. The presence of these undiagnosed small fibromata of the pylorus may account for many of the cases with gastric disturbances in which x-rays and other examinations are seemingly negative for organic disease. Benign stomach tumors as a group should be suspected in any case in which the gastro-intestinal symptoms are not characteristic, especially if the roentgen examination is not diagnostic.

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PNEUMONIA—A SHORT CLINICAL LECTURE

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Pneumonia has been known to the medical world since the first dawn of medical history. It ranks even yet as probably the most important in the category of diseases. Its mortality is startling and its morbidity cataclysmal. It is the bitter enemy of early childhood, "the captain of the men of death" to adolescents, and the gentle final ministrant to the senescent. In addition to all this, with its varying moods and tenses, its kaleidoscopic changes and its multitudinous manifestations, very readily it can be considered as the protean leader in the roster of diseases.

We are presenting today a history of a case of this disease which demonstrates an unusual type of this protean disease, an unusual diagnostic aid and an unusual ending. It will serve also as a text in a plea for an adjustment of morbidity and mortality rates and in a revision of nomenclature.

Case Report

The case we present is that of a lad, George S., age seven, an inmate of the Protestant Children's Home of Detroit, who was admitted to the infirmary of that institution at noon October 12, 1934. He had been taken suddenly ill that morning with vomiting of a violent character. There had been no bowel movement for two days and the nurse immediately treated him to a soda enema to give the necessary relief. A copious stool was recovered, but the child apparently was no better therefor. He continued to vomit large amounts of material, some of which was undigested food from the previous day. His temperature ranged from 103 to 104 degrees; his pulse from 120 to 140, and his respirations from 25 to 32.

He was such a sick lad that both Dr. Perlis and I saw him during the afternoon and evening, but after the most careful examination decided that the diagnosis was entirely uncertain. The suspicion of pneumonia with the usual violent introduction was largely and deeply considered, but the absence of all physical signs and all extraneous symptoms, such as rapid and grunty and painful respiration, flushed cheeks, dilatation of the alæ nasi, cough, with or without pain, and a delirium paralleling his high temperature were all absent.

Moreover, in the comparatively near neighborhood, at that time there was a small-sized epidemic of poliomyelitis and the possibility of this being an unusual type of this disease had to be gravely considered. It may be added here, however, that as the days went by there was at no time any suggestion of neurological symptoms which would indicate a case of that disease. Parental reluctance motivated the attending physicians in declining to use spinal puncture, which, of course, would have immediately cleared up this phase of the case. However, close watch was kept of the nervous system and at no time was anything suggestive of poliomyelitis discovered.

He seemed to be entirely too sick a lad to be the victim of an ordinary gastric upset, and yet that phase of the matter was considered in the belief that some food intoxication might be responsible. The continuance of the fever caused us of necessity to rapidly drop this idea as a diagnostic possibility.

The case went along for the succeeding seven days without any appreciable change except com-

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plete cessation of the vomiting after he was removed to Grace Hospital three days after he was first taken ill. On the fifth day of his sickness the temperature dropped very suddenly to about 100 and fluctuated between 98 and 101 for the next three days.

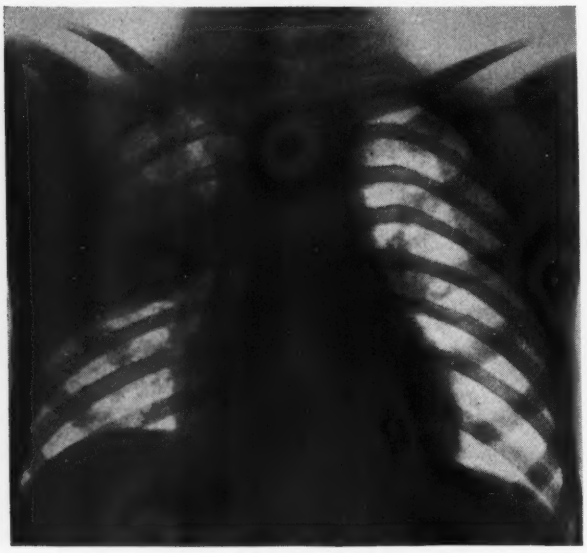

Fig. 1.

A paralleling drop in respiration and temperature was noted at the same time.

During this period he was under the observation, not only of myself and Dr. Perlis, but also of Dr. Wishropp, attending pediatrician at Grace Hospital, and also of the resident physician on the ward. Through all this time (and this is the interesting part) despite careful search not a single aberrant sign could be discovered anywhere in the chest, by any of the attendants. Moreover, at no time did the lad show any of the usual signs outside of the chest so common to the pneumonic process. He never coughed for an hour, showed no undue restlessness or delirium despite his high fever, he had no flushed cheeks, he had no nasal dilatation, and generally he did not strike us, after the first two days, as a particularly sick boy. However, through it all and despite the fact that he was symptomless insofar as the chest was concerned, each one of us had back in his mind the feeling that there must be a pneumonic process going on somewhere. The blood findings aided us in this diagnosis as the blood test on the 4th day showed a hemoglobin of 72 per cent, R.B.C., 3,650,000; W.B.C., 24,400. This, of course, was very suggestive of an inflammatory process, presumably in the lungs.

It was then decided on the fifth day of the disease, to get the help of the x-ray on his chest, although, as was remarked a few moments ago, there had not been a single symptom outside of the blood findings, and outside of the violent onset of the disease process, to lead us to any such assumption. This action on our part, as the picture attached will show, was our most constructive piece of work. As will be noted and as the x-ray technician demonstrated to us, the process responsible for all the symptoms in our patient was a well defined inflammatory pneumonic process in the right apex and middle lobe of the lung.

After viewing the x-ray picture two of us took occasion to go over the lad again, examining him with the utmost thoroughness. Now, this is the interesting part of the case: Despite our most careful examination we were unable to detect any change whatever in the percussion note or in the respiratory tones even over the area which according to the x-ray picture was sharply diseased and sharply consolidated. It was indeed a striking revelation of the ineptitude of ordinarily accepted physical examinations in some cases of pneumonia. It was also a beautiful demonstration of the value of x-ray pictures in cases of doubtful pulmonary disease.

The next point to consider is the proper terminology to be used in the naming of such a disease process as this. Ordinarily this would be called a case of "root" or "central" pneumonia, despite the fact that clinicians for years have deprecated the use of this term because of the doubt of there being any such pathological process in the root area.

Dr. Holt (L. Emmett), as far back as 1920, put exceedingly well the case against the idea of a "root" or "central" pneumonia in such cases. He says, "That pneumonia may exist only in the center of the lung for a number of days is extremely improbable. At autopsy we have very frequently seen superficial pneumonia, but never central lobar pneumonia. X-ray studies have shown conclusively that with a superficial consolidation no bronchial breathing may be heard even though the consolidation may be fairly extensive. When the process extends towards and reaches the hilus of the lungs, bronchial breathing is readily heard. It is the superficial pneumonia then that escapes detection rather than the central."

To retrogress for a moment, we might refer to the fact which is well recognized, viz., that in many cases, particularly in children, the appearance of the ordinary physical signs of the chest in pneumonia are postponed to the third, fifth, or even the seventh day of the disease. Our case, consequently, does not deserve the spotlight on account of the late appearance (which really amounted to a non-appearance) of the chest symptoms in this case. The condition that makes it a case of rarity and unusualness is the complete elimination from the picture of not only the pulmonic signs but of also every one of the ordinary extraneous physical signs so diagnostic and so usual in this disease. Our experience leads us to believe that it is most unusual to see a case of pneumonia through its whole course without there being a single symptom to point the way to a diagnosis of pneumonia. The dilatation of the alæ nasi so exceedingly common, the flushing of one or both cheeks, the frequency and character of the respiration with its expiratory grunt, the delirium—some one or

all of these is almost constantly present to guide us to a correct conclusion. But here were we groping in the dark until the x-ray vision came to our aid.

Had this been a case in which specific medication in the form of sera had been indicated, and in which the early medication of such might have spelled success as against disaster, or life as against death, our ordinary methods of examination would have proven entirely futile and our patient would have succumbed to our tardiness due to our lack of knowledge. Hence, a strong argument of great force in favor of the early use of the x-ray in cases in which the element of doubt clouds the diagnosis of a possible pneumonia.

Another feature may be considered here, if it is true, as numerous roentgenologists and clinicians assert, that many cases of pneumonia particularly in children run their complete course without a correct diagnosis being made and where the opinion of the attending physician is that they have run through a course of some type of influenza, abdominal or thoracic, and where the disease process is of short duration, the necessity for a correction of statistics both in the morbidity and mortality is apparent. Statistical data undoubtedly would be considerably modified with the aid of the all-seeing eye of the roentgen ray.

Summary

1. Pneumonia, particularly in the young, may and often does run a shortened and unusual course.
2. Although the physical findings of the chest may be absent up to the fifth or seventh day, extraneous signs as reported in the paper, are practically always in evidence —not all of them by any means, but one or two which may give a clue to the diagnosis.
3. The blood count with its leukocytic increase is always of great value in doubtful cases.
4. The value of the x-rays in early diagnosis of pneumonia is undoubted and is demonstrated by the case under discussion.
5. The use of the term "root" or "central pneumonia" is deprecated and should be unequivocally discarded.
6. A statistical adjustment of morbidity and mortality rates should be demanded in this disease, if the x-ray continues to prove its worth as an early diagnostic aid.

The chief objective finding in pneumonia is an increase in density involving some part of the lung. No other part of the human body, unless it be the bony skeleton, lends itself so admirably to x-ray diagnosis as the organs of the thorax, particularly the lungs. This fact is well recognized in suspected tuberculosis. The x-rays have not been used so frequently as diagnostic agent in pneumonia due to the fact that the pneumonic patient is usually very sick. X-ray apparatus has been developed so that bedridden patients in their own homes may be examined by means of the x-rays with practically no discomfort. Doubtless with the perfection of portable apparatus the general practitioner will resort in greater measure to this means of diagnosis and checking of the progress of his patient.—EDITOR.

THE EDUCATION OF FRANK ANDREWS

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We are gathered at this banquet from several towns and cities to honor Dr. Frank E. Andrews, still active in his profession after over half a century of the practice of medicine. The beautifully engraved parchment which has been presented to him informs him that he has been elected an Honorary Member of the Lenawee County Medical Society and Member Emeritus of the Michigan State Medical Society. This is the Society's patent of nobility, conferred not merely for years of practice, but for character, achievement, service to his fellowmen, and fidelity to his profession.

It is a privilege to pay tribute to my friend, in the midst of his brother practitioners, and in the city of his birth which he has served with such distinction as physician, mayor and citizen. I can speak with sympathetic understanding because I was born

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in this same city, reared in the same schools, entered the same profession, and received my M.D. from the same University.

From my earliest recollection there was always a Dr. Andrews in Adrian. It was a Dr. Andrews who, in my childhood, first gave me castor oil and inspired respect for the medical profession. Frank, at this time, was enough older than I so that our paths never happened to cross, for in boyhood twelve years is a wide gap. I say older "at this time" because in later life such age-gaps close without trace.

Dr. Andrews was the son of a physician and the father of another. His paternal grandfather was a minister. I am tempted to say, jokingly, that this heredity never hurt him. But, seriously, there was always something of the preacher in Andrews, although not with a theological outlet, for he grew up in a medical atmosphere. After graduating from the Adrian schools, he entered a drug store as a clerk—a recognized preliminary in those days to the study of medicine. However, young Andrews became so interested in this work that he matriculated in the Pharmacy Department at the University. But next year we find him changed to the Medical Department, which was his manifest destiny. In 1878 he won his M.D. at the early age of twenty. Not being of legal age to practice, he filled in a year with a post-graduate course.

Returning to Adrian with more than the usual preparation, he practiced with his father for about a year. With the youthful desire to strike out for himself, he went to Pentwater, Michigan, long enough to get married, and then settled at Bear Lake, Manistee County. There was the spirit of adventure in this selection of a location. It was a pioneer country in the days of lumber-camps and wild-game. One season he and a few friends hung up forty-two deer for the community. Deer-meat took the place of beef even in the matter of mince pies. The streams and lakes swarmed with fish. Dr. Andrews is still seen at his best with a creel under his left arm and a fly-rod in his right hand, unless it be in the evening in a northern cabin with his stocking feet stretched out to the open fireplace and with his old pipe held aloft, while he narrates the thrilling events of the day on the stream. I use the word, "narrates," advisedly, because a narrative is not necessarily history.

If you would know a man, live with him in the woods, fish with him, hunt with him, play games with him. The code of a sportsman is indeed the code of a gentleman and has held many a man to a high sense of personal honor in daily life. It is sufficient then to say that Dr. Andrews is a clean-cut sportsman.

At Bear Lake he was the only doctor for twenty miles on one side and forty miles on the rest of the circumference. He rode from patient to patient on horseback. Several horses were needed in his stable because not infrequently he rode eighty or more miles a day. He loved horses. His father had had a weakness for the "sport of kings," and had owned a private race-track on the outskirts of Adrian where young Andrews had had a chance to learn horseflesh from thoroughbreds.

Pioneer practice develops a resourcefulness quite unknown to city and hospital practice. On one occasion when a man had his face nearly cut off, Dr. Andrews took a door from its hinges to make the top of an improvised operating table, and, by the light of a kerosene lamp, removed most of the crushed bones of the face and jaws and sewed the face back in place. It was more than a successful operation; the patient lived. Later, Andrews found that he had performed a rare operation such as a famous surgeon would have taken pride to report in literature. In time the patient was equipped with a rubber jaw at the University of Michigan and lived comfortably many years. In fact, it was years later that Dr. Andrews was stopped on the streets of another city by a man who said, "You don't know me?" Andrews answered courteously, "You have the advantage of me." "So you had of me, once," was the reply. "I'm the man with a rubber jaw."

In 1885, forty-seven years ago, Dr. Andrews returned to Adrian, to take the place left vacant by his father's death. His life since is familiar to you all. He would have been a prominent man in any community. In his younger days he served the city as city physician and health officer, and in later life was twice Mayor. He was a charter member of the Lenawee County Medical Society and has always firmly upheld the ethics and honor of the profession which he loved so well. He is a Mason and an Odd Fellow. The Odd Fellows made him their

Grand Master for the State of Michigan, and in 1904 sent him, as a Past Grand Master, to represent the State Order at the national meeting in California.

An incident in his life was the opening of the Cherokee Strip. Preceding the great rush, Dr. Andrews, with some friends, laid out the plans for a new city, to be located on this strip. The spirit of adventure was still strong within him. He longed to take part in the rush but his responsibilities made this impossible. Nevertheless, the present city of Ponca is today the literal materialization of this plan, which was drawn in Andrews' Adrian office.

Dr. Andrews has been a good citizen, to put it simply but adequately. As a husband and father, he has shared the common lot of mankind. He has a daughter, and a son who continues the professional traditions of the family with high and increasing credit, and grandchildren to carry on and perpetuate his line.

I chose the title, "The Education of Frank Andrews," because, like Henry Adams', his education was never finished. It followed an epoch that has not yet reached its zenith, for Dr. Andrews has had the good fortune (shared by my hearers) of living in the most progressive period of the world's history—in medicine no less than in a world of amazing invention and discovery. By the term medicine, we mean the whole range of medicine and surgery with its specialties, its natural history of disease, its diagnostics and therapeutics, its physiologies and pathologies and its allied sciences. All this by common usage is "Medicine." In this sense of the word, Dr. Andrews, during the brief span of less than a lifetime, has seen greater advances in medicine than had been made from the date of his birth back to the time of Hippocrates—a period of over 2,000 years. We realize that to the laity, and even to the physician off his guard, this seems an incredible statement—rhetorical, hyperbolic, extravagant. But as we trace chronologically the events of Dr. Andrews' life, we see that it is true with a wide margin to insure veracity.

Most of this mighty advance was made in the years following his graduation. Like other physicians of the same period, he had vastly more to master during active years of practice than in the years of undergraduate study. How this was done by Dr. Andrews and his generation is a true source of professional pride. It was an extraordinary effort at continued education, without a parallel in any other profession. Lawyers, clergymen, engineers, chemists, teachers—no other body of professional men or women can show anything comparable to this sustained educational purpose which ever renews and maintains the springs of medical intelligence and learning.

This ceaseless education has become a necessary condition of medical practice and was, and still is, being accomplished by innumerable medical societies, county, state and national; by countless associations of specialists; by hospital staff meetings, postgraduate schools and numberless clinics; and by the rise of a vast medical literature, the extent of which can only be comprehended by contemplating volume after volume of the Index Medicus. So overwhelming is the number of current medical periodicals in every language that they entirely surround the great reading room of the New York Academy of Medicine, tier on tier. No wonder that graduates take refuge in specialties and that the specialist has been defined as "a man who knows more and more about less and less," while the general practitioner has acquired the inferiority complex of one who knows less and less about more and more.

But this same general practitioner has had to filter out the really practical facts and methods to be applied in the treatment of the sick, not only in well-appointed offices and hospitals, but in the home, on the farm, in the factory, by night and by day, always in the first line of defense. It is he who is the ultimate figure to whom all medical education is addressed. To keep informed, to discriminate, to utilize experience, to form sound judgments, to justify the confidence of those who trust him—this is no small undertaking. And in this light we see Dr. Andrews clearly focussed as typical of the physicians who form the backbone of our profession, the trusted advisors of their fellowmen, the only real masters of medicine. The general of an army employs engineers, technicians of all kinds, ballistic experts to direct the artillery, miners, aviators, chemists, artisans without number. And yet it is he, like the attending physician, who must win the battle. Is this fanciful? Perhaps it is, but let it stand, for it conveys an essential truth.

No physician need apologize for practic-

ing in a small community. Some of the ablest practitioners I have ever met have been from small towns where they located after graduation, married, formed friendships, and—stayed. Some thus had wisdom thrust upon them because the best of life is to be found in the small city—almost only in the small city—and there also are to be found the best of those human relationships which can develop between patient and doctor. Furthermore, from town and countryside have come an overbalancing share of both medical and surgical advances, a few of which are interesting to recall in defense of practice in the small community.

Michigan is more famous in medical history because of the work of an obscure surgeon on Mackinac Island than for all the splendid work done at her great University; for it was here in a small military settlement that William Beaumont discovered the more important facts concerning the physiology and chemistry of gastric digestion. Perhaps this was due in part to a quality of romance in this story of Beaumont and Alexis St. Martin. However this may be, it was one of the first pieces of American research to receive early recognition in Europe, where soon Kussmaul developed the stomach tube and its clinical uses. But Adolf Kussmaul himself is another illustration in point, because he was the son of a country doctor and himself began practice among the country mountaineers and lowland farmers about the little town of Kanern, although he became later one of the greatest of European clinicians. That this was in Austria instead of America merely shows the universality of our thesis.

It was Ephraim McDowell, in the little village of Bowling Green, Kentucky, who performed the first ovariotomy, while a mob gathered about the house to lynch him if the woman died. It was J. Marion Simms, in the backwoods of Alabama, who worked out a great surgical principle in accomplishing for the first time the cure of vesicovaginal fistula, and became the leading American surgeon of his day. At the time of the assassination of President Garfield, he was on a tour of European clinics, operating before large gatherings of surgeons and received more honors and decorations from foreign governments than any other surgeon before or since, excepting, perhaps, William J. Mayo.

Dr. Crawford Williamson Long, in the small remote southern village of Jefferson, Georgia, used for the first time ether to produce anesthesia during a surgical operation, although this honor was for years given to Dr. William T. G. Morton, of New York. Robert Koch, while practicing medicine in the country town of Wallstein, in Germany, discovered and developed the bacteriological methods that have become foundation stones of modern medicine. James MacKenzie, while practicing medicine in a rural community in Scotland, studied the hearts of the country folks with a polygraph of his own devising. Out of this study arose a new cardiology and a new understanding of diseases of the heart. He became, later, the leading clinician in London, and Sir James, only at the height of his career, to return again to practice among his old friends about Burnly.

Without exhausting the list, and so also not to exhaust my hearers, I will mention merely one other example, the best known and most astonishing of all, the Mayo brothers of Rochester, Minnesota. That these two small-town physicians and surgeons should have made a little village of about 8,000 on the open prairie, the greatest surgical center of any age; and, by the gravitational influence of genius, have gathered about it a great planetary system in the medical heavens, is a phenomenon for which many explanations have been offered. We have none to add, but would reaffirm simply that no doctor need apologize for practicing in the small town.

To but few, in any environment, comes the achievement, or the accident, of a great discovery. Our chief glory in medical practice is more humble but in a way far more important. It is the practical applications of discovery and improved methods, to the care of the sick, the cure of disease, and the relief of suffering.

This adaptation of medical advance to practical needs was, and still is, an Herculean task. During Andrews' boyhood, new facts were accumulating and medical discovery was gathering headway. To the practical men of that day, who were no exception to the practical of any day, most of these facts seemed infinitely remote from possible utility. But always there is a gestation period for a pregnant fact. The year of Andrews' birth was the year that heard also the birthcries of modern pathology, for this

was the year when Virchow's greatest brain child "Cellular Pathology" dropped from the press. It was the result of a new conception of disease. That it came to a comparatively early maturity notwithstanding the dead weight of professional conservatism of those days, was due to the dynamic personality of its progenitor. In a life of almost superhuman activity and versatility, Virchow dominated the medical thought of his time, and his career overlaps the period of Andrews' student life and early practice. Medical men were made conscious of the vast biological unknown that surrounded them. While everywhere research grew in importance, yet actual changes in college teaching or in practice came slowly; in America, so slowly that it hurts our professional pride to recount it.

In 1882, five years after Andrews' graduation, Koch announced the discovery of the tubercle bacillus and proved it to be the cause of tuberculosis. A more perfect and conclusive piece of research has never been published. Six years before this, Koch had given to the world the bacteriological methods that already had led to the discovery of a number of pathogenic bacteria. But this was after Andrews' graduation. It was not until the overwhelming importance of the discovery of the tubercle bacillus stirred medical consciousness that schools in America took notice. To quote from Landis in the Annals of Medical History on "The Reception of Koch's Discovery in the United States"; after commenting on the fact that this discovery did not reach the American public for two months after Koch read his paper and that the non-medical press was the first to set forth its importance, he says:

"Looking back at this period we find that American medicine was illy equipped to deal with such problems. But few of the medical schools of that time made anything more than a pretense of teaching pathology; and bacteriology, then in its infancy, was hardly thought of. Such facilities as were offered were totally inadequate. The pathological department of one of the great schools of that day was described as a single, gloomy, and ill-smelling room with a meager equipment. With few exceptions, those interested in the investigative side of medicine at that period practiced medicine as a vocation and pursued their scientific studies as an avocation. Dr. Trudeau's experience was probably typical of many others at this time. After spending days of discouragement in which he succeeded only in covering himself with the staining reagents and vainly looking for the stained organism through the unfamiliar microscope, he was about to give up in despair; an inauspicious beginning for one who, under great difficulties, was later to be the first in this country to isolate the bacillus in pure culture from the sputum."

It was my good fortune in 1892, ten years after Koch's epochal discovery, to take the first laboratory course in bacteriology under Vaughan and Novy, offered at the University of Michigan. Dr. Andrews had then been in practice for fourteen years. Medical research, which was learning to walk about the same time that Andrews did, has since flown on the wings of an airplane.

At the time of Andrews' graduation from the University there was no bacteriology. Germs were not yet accepted as the causes of any diseases except anthrax in cattle. Infection, the nature of pus, the meaning of inflammation, and the reason of fever were imperfectly understood. There was no antitoxin, no serums, no vaccines, except for smallpox. There was, of course, no bacteriological diagnosis, no cultures, no examination for the malarial parasite, no Widal test for typhoid fever, no Wassermann test for syphilis, no sputum test for tuberculosis, no cultures for diphtheria, no animal inoculations. There were, in fact, no laboratories remotely worthy of the name.

It is true that Fracastorius in the declining days of the Roman Empire stated clearly his conception of minute living particles as the causes of disease and contagion—an amazing insight in the absence of microscopes, stains, cultures or inoculations. And then came a lapse of a thousand years. Leeuwenhoek, some two centuries before Dr. Andrews was born, first actually saw and described bacteria by means of magnifying lenses of his own grinding. But it was not until 1864, when Andrews was eleven years old, that Louis Pasteur perceived the nature of fermentation, proved the cause of anthrax, and set at rest forever the theory of spontaneous generation.

The advance in science and research is never a mass movement. It is the work of individuals. The level of our civilization is not a level of general culture, it is a level resting upon peak achievements of supermen. Fracastorius, Leeuwenhoek, Pasteur, Koch, Ehrlich, Vaughan, Novy, von Behring—these are some of the supermen of bacteriology.

Because of their work, sanitary science has superseded the age-slow processes of race immunity. Intelligence has outrun evolution by unknown geologic periods. It is

true that the control of the plagues of the middle ages, and of smallpox, was the work of preceding centuries, and that influenza remains to be conquered, but it is in Andrews' time that the menace of infective diseases as a class has been largely removed. Diphtheria and scarlet fever no longer claim their victims as they did in Andrews' early practice. The spirochete of syphilis, that great conservator of morality, and the cause of untold physical degeneration, had been brought to the light of the oil immersion lens and its powers curtailed by a therapeutic discovery which stands as a model of systematic research. The revelation of the rôle of insects as the carriers of pestilence and the applied knowledge of malaria, typhoid, yellow fever and cholera have opened the tropics to the white race. The building of the Panama Canal is a concrete example of what is more a medical than an engineering triumph.

It was, likewise, the rise of bacteriology that led to antiseptic surgery, and here there was no delay in making a practical application. But this required genius of the highest order, the genius of Joseph Lister. Our medical forefathers spoke of laudable pus. Suppuration was supposed to be a necessary part of the healing process, notwithstanding Hippocrates' statement of ideal healing by first intention. Hospital gangrene, phlegmon, and erysipelas seemed ineradicable. A compound fracture was commonly a cause of death from sepsis. Dr. Andrews was already seven years old when Lister published his first announcement of antiseptic surgery. He had applied carbolic acid solutions in cleansing the wounds of compound fractures, following with carbolic acid dressings. Marvelously, wounds healed without pus. He extended this method to all surgical operations, and modern surgery was born. But so slowly was Lister's work appreciated, and so great the unbelievable indifference and even antagonism of the profession, that it was weary years before its general adoption. In America antiseptic surgery was not generally practiced until well after Dr. Andrews' graduation. The comprehension of the surgical principles involved led rapidly then to aseptic instead of antiseptic methods. It was thus given to Dr. Andrews to witness the adoption of a revolutionary surgical technic, the changing status of the trained nurse and the construction of the modern hospital.

In the earlier days of Andrews' practice, hospitals were still places devoted solely to the treatment of the sick. He has witnessed an extraordinary enlargement of function with the rise of the clinical laboratory and the roentgen-ray until now hospitals have become community centers of diagnosis, with equipments which the single physician can rarely equal. He has thus seen the common resources of the profession expanded beyond the imagination of his medical forefathers. He has seen, also, rising dangers and evils in hospital practice which we cannot adequately here discuss. But, fortunately for the whole profession, he has seen a great national society, The American College of Surgeons, reach out with wisdom and power to grade, elevate, and control in some measure, all the hospitals in the United States—an amazing achievement.

However, both in and out of hospitals, Andrews has seen the art of diagnosis reinforced by a bewildering array of instruments and laboratory methods, so numerous that to list them would be tiresome. Does this mean that diagnosis has become a matter of machinery, instruments, chemistry? On the contrary, never has it been more necessary to evaluate the evidence and to correlate such findings with the symptoms and the history of the patient which now, as ever, remains the fundamental document in every case. Early habits of expert cross-questioning of patients, and the minutiæ of the old-time physical examination, has saved many an older practitioner from the pitfalls of premature laboratory deductions. The body itself is the most delicate of all diagnostic instruments, albeit the most deceptive. It responds by signs and symptoms to the invasion of disease. By training and experience, by the educated eye, ear, and sense of touch, aided perhaps by natural endowment, the old-time physician detected the cry of an organ or tissue in distress. Then laboratory tests and clinical instruments might correct, confirm, amplify or even introduce new evidence without displacing judgment.

It is at this point that Dr. Andrews is seen to the best advantage unless it be in that quality of character which could give his patient the feeling of security and trust that his case is in the hands of one devoted unswervingly to his good.

Dr. Andrews has seen the development of hypodermic and intravenous medication, the lumbar puncture, the transfusion of blood,

and innumerable therapeutic advances that would and do fill volumes. However, few events which Andrews has witnessed have been of such growing importance in actual practice as the gradual emergence of a new physiology of the glands of internal secretion—the endocrines. Although the influence of the sex glands in determining personal characteristics was known from the earliest times, yet it was not until Claude Bernard, in 1857, the year of Andrews' birth, isolated glycogen and coined the term "internal secretion" that the function of the ductless glands became the subject of a new experimental physiology. Then came Brown-Sequard, Addison, Gull, Sajous, and a host of others, crowding into this most fascinating field.

While the nervous system of lowly organisms was still in the first processes of evolution, different tissues communicated with each other by chemical messengers, the hormones. Later, specialized cell-groups developed with greater powers of a similar nature, until now the evolved animal-body is seen to be a laboratory within which are manufactured powerful substances necessary to life, to normal growth and to the healthy function of every tissue of the organism.

The thymus, the thyroid, the parathyroids, the adrenals and, most powerful of all, that little gland the size of a small hazelnut, securely housed in the cup of the sella turcica at the base of the brain; these all, by a marvelous interplay of secretion, determine the development of the body, and influence the central nervous system together with organic functions to a degree which only rigid experimental proof can make us believe. They determine whether we shall be short or tall, myxedematous idiots, or normal beings. They determine the composition of our bones, our basal metabolism, our temperature, pulse rate, blood pressure. They determine the hair on the head, the shape of the nose, chin, hands and feet, the speed of childbirth, the quantity of urine, sexual potency and, to a large extent, the disposition of the individual. To be sure, this is not all, but it is enough to make us wonder if the endocrine glands are chemical masters of instincts, and just to what extent the brain, heart and other organs are merely responsive instruments. Andrews might also wonder if it would not have perplexed his ministerial grandfather to have reconciled his teaching of Moral Philosophy and the freedom of the will with this physico-chemical basis of personality.

Medical discovery must seem to Andrews like a relentless schoolmaster who gives out new lessons before he can master the old ones. A new therapy, significant regarding the ultimate control of vital processes, unfolded before him. It was at the same time highly speculative and unanswerably practical. Thyroid extract, adrenalin, pituitrin —it is enough to mention their names for they have taken their places among the indispensable agents in the pharmacopœia. Banting's insulin, an internal secretion, marked the conquest of a metabolic disease, diabetes. A secretion of the stomach-walls, stored in the liver, controls another deficiency disease, pernicious anemia.

That the secret, so long sought, of the etiology and cure of this last disease should have been hidden in a common article of food like liver was spectacular, but not more so than a preceding discovery that in common foods there are substances other than proteids, carbohydrates, and fats, which are absolutely essential to health and often to life. They are, of course, the vitamins. From them, Andrews had to learn a new theory of diet, quite different from that with which he left college. And wise is he who can now distinguish between food and medicine.

The discovery of the x-ray was like a total change of subject without notice. It was perhaps the most meteoric discovery of all time. Andrews was then thirty-six years of age, in the full tide of practice, when, in 1895, Roentgen made his announcement. Nothing so contrary to the universal experience of mankind had ever before or since compelled belief. The most enthusiastic early predictions of its value in diagnosis are still of interest to show that its actual development far transcended the wildest imagination of the period. And who could have dreamed that this intangible radiation, which could neither be seen nor felt, could exert so profound an influence over living matter, and become so powerful an agent in the treatment of disease. If every other medical advance in Andrews' lifetime were blotted out, the roentgen-ray alone would still make it the most memorable period of medical history. Its influence is vastly wider than medicine. It has changed the founda-

tions of physics and chemistry. But time precludes further discussion which would lead us far afield.

It was not the purpose of this sketch to give anything like a comprehensive review of the period of Dr. Andrews' professional career, but only to indicate by milestones the course which he had to travel, and to pause with him now and then to catch in retrospect, a new horizon of medical thought as he may have seen it. I think you will agree that his education was never finished—never can be finished. But he is equipped by long training and a high intelligence to see and understand all that research and discovery can bring, in the future, to the science and art to which he has devoted his life. It will be his privilege to watch with unabated interest the unceasing evolution of medicine in its broadest sense. He has won the admiration, respect and affection of his fellows. We honor ourselves in honoring him, because he stands as a typical member of our profession—one who has known its hard work, its privations, its uncertain financial rewards, its incessant demands on time, its discouragements; but one, also, who has known the joys of accomplishment, of genuine service to his fellowmen, of the gratitude of patients, and, best of all, of the approval of his own conscience.

We can hope nothing better for future students of medicine than that, like Andrews, their education may but begin with their graduation. Many statesmen, in many countries, are not averse to making them salaried dependents of the State, working in the interests of a health insurance system. When, if ever, that is accomplished, then some future speaker at the honoring ceremonies of some future Andrews may refer with emotion to this present period as the golden age of medical discovery and advancement.

AS SEEN ABROAD*

JULIUS POWERS, M.D.†
SAGINAW, MICHIGAN

We went aboard the Bremen on Friday, October 19, 1934. The first thing we found we were in berths which formerly were first class, but now are tourist. At breakfast we could not find a single Jewish face, showing how completely that race is shunning Germany. The passenger list was small with only 140 in the tourist list.

Dr. Galsterer, who is accompanying me, and I have fallen into the routine very well. We arise at 8 o'clock, eat at 8:30 o'clock, play ping pong or bowl for an hour or so, then get our ship paper to read the day's news. This is printed in German and English. At 12:30 we have lunch and after a promenade on the deck we go to a movie. These are all in German, but the conversation is filled in with English footnotes on the pictures. The music, especially the singing, is marvelous, but the artists do not have the fine trained control of their faces that our Americans show on the screen. At four o'clock in the afternoon there is a concert. Most of them are the heavy classical German works. At 7 P. M., we have our dinner. The food, both in variety and preparation, is marvelous. The service leaves nothing lacking. Imagine my surprise at being served venison. In the evening, first comes the horse race. Almost everyone goes and gambles a little. This is followed by a ball. There is a great scarcity of ladies, so the ball is not very well attended, but when a Bavarian ball was given, everybody seemed to turn out. The musicians and waiters appeared in costume and the music was peppy German ballads. Extreme courtesy and cleanliness are remarkable.

On touring the ship, one can understand why it cost eleven million dollars and why it has a personnel of 965. At the bridge we obtained a vague idea of how science has

*Realizing the interest of the profession in accounts of experience abroad by members who go for pleasure or postgraduate work, or both, the editor asked Dr. Julius Powers, president of the Council of the Michigan State Medical Society, to detail his experience of the past three months. This excellent description of his observations is the result.

†For professional note see October JOURNAL M. S. M. S., page 571.

made navigation more safe. The steering was all magnetic in normal weather, but hand-steering is resorted to in storms. The windshield wipers on the windows remind one of an auto. The instruments are comparable to a speedometer, the principle controlling this being water pressure on the bow. As we looked, it registered 27 knots per hour. The power plant, 100,000 H. P., is large enough for a city of 35,000. The propeller rates 185 per minute in ordinary weather but must be slowed during heavy swells to prevent pounding. There is a graphic chart of the course showing how the ship deviates a degree or even two at times. On leaving the bridge, the life boats are seen. Each is designed to hold eighty people. These are unsinkable and have a waterproof motor with a supply of gas to cruise 500 miles.

Going then to first class, we see quarters more magnificent than any hotel. The woodwork, paintings, and decorations are beyond description. Woods from all over the world are used in various combinations and inlays. Tapestries of great beauty are in panels on the walls. In the social room we see a beautiful fountain with many colored lights. Six thousand bulbs are used in this room alone. The library is very complete. One can get fiction, travel, history, or religion. As in a hotel, there is a public stenographer; also typewriters for service of travelers. One must not forget the entertainment, shooting gallery, gymnasium, bowling alley, swimming pool, and a special children's play room with typical German toys. Nothing has been spared to add to the comfort of the traveler. There is a winter garden with palms, chrysanthemums and many other plants in profusion. This being a glassed-in portion of the deck, it is heated with electricity. The first class have a regular dining room, not much better than the tourist class, but in addition have a private dining room run as a pay restaurant. There are ample staterooms and suites. The entertainment is about the same as the tourist. Last night only one couple was dancing.

Our tourist section has access to gym, swimming, and bowling at certain hours. We have a social hall with movies, and dancing, also a smoking room and a bar. Not as luxurious as first class, but as big and very satisfactory.

Going down to third class there is a great difference. The berths are smaller. The kitchen odors are more noticeable. The entertainment is much more limited. There is a marked difference in furnishings. The kitchen and storage facilities are superb, with large bakeries in connection. I could not help but smile to see the laundry run by a gang of Chinese. A special kitchen was present to care for special cooking for orthodox Jews.

An interesting observation was made in regard to nurseries or children's playrooms. The first class was small, but very complete with beautiful toys. These did not show use. The second class was of moderate size with good toys that showed some use. The third class was large with few toys and these were badly battered, emphasizing that the poor man has the kids.

In a special visit to the ship board hospital we found a thirty-bed hospital with one nurse or schwester, and two male attendants. It seems they require one hospital bed for every one hundred on board. A small operating room with instruments for an emergency laparotomy or amputation is furnished. They use ethyl chloride as a general anesthetic for minor operations.

At a point between Portsmouth and the Isle of Wight, we stopped and a couple of tenders came. Mail, baggage and many passengers were unloaded and an equal number came aboard. Those getting off were taken to Southampton. We then proceeded to Bremenhaven, arriving within ten minutes of the time we were told we would arrive. After going through the German customs we got on a train and went to Bremen. Through some letters, we were able to go to the surgical hospital and had a very fine three hours. The most outstanding thing to us was the simplicity of the treatment of fractures and the inexpensive apparatus used. Through other letters, we were given a chance to see a reproduction of a 14th century street that has been rebuilt. This series of houses had rooms furnished in the same original furniture of the time. Other rooms were converted into museums. To me, a wonderful old clock with a series of some twenty bells making a chime which played a tune at twelve and six was very interesting. These bells were made of porcelain, the largest about 16 inches high. These were suspended in a group on wires stretched between two gables.

We had lunch in the world-renowned Rathskeller, with the casks about 15 feet across the head and all carved in marvelous patterns. We then went to the Lutheran cathedral built about the year of 1600. On going into the cellar, one could see the remains of the old Catholic cathedral that had preceded this by some 300 years. At the back of this church is a peculiar cellar called the Bleikeller, where bodies have laid in the open since the 17th century. Due to some unexplained phenomenon, these bodies have gradually become mummified and appear with lead clothing, et cetera. It is rather a gruesome sight. One had his throat cut and another had a cancer of the face.

There is a village near Bremen that is surrounded and flooded with water about one-half of the year and, through inbreeding and lack of food, the people have developed many nutritional disorders. A clever painter started painting this group, and I may say that I never saw so much woe and such marked pathologic conditions put on a canvas by an artist. Rickets and scurvy predominated. The artist died before the collection was complete.

A question I was asked again and again was, "Why does America dislike us"?

We went from Bremen by rail into Berlin. We went to a hotel to which we had been directed. Here we stepped into an elevator just large enough for three and went to the fourth floor and were ushered into a room which was 30x16x14 feet high. I wish I could give you the picture this room made. The furniture was the old mahogany, hand-carved, plush-upholstered. A 12-foot mirror was in one corner with carved figures at the top, and a desk in another corner. There was an enormous wardrobe with a mass of carving, a round table, and over in another corner a solid tile stove 4 by 4 by 12 feet high. In the old firebox we found a square wood-burning stove had been installed. One heating of the tile would last a long time, because it is so massive. The windows had old curtains and drapes that must have seen service many years. The rugs were more modern. On top of this collection of antiques were twin beds of very recent vintage.

At breakfast, imagine our surprise to see a waiter in full dress. Sunday morning we learned of a big celebration at the University place, Unter den Linden. All the men, whom Von Hindenberg had given the cross of honor, were assembled and we saw a big military review with several bands and the usual trimmings. When the regular army came along, they were in full-field equipment. It was noticeable that they marched in threes instead of fours as we do in the United States of America, and the only place they used the old goose step was the first few steps from a standing start. When the crowd saluted, we did as they did, so as to avoid trouble. In looking over the crowd, we both remarked on how well-dressed they were, certainly rather better than a Michigan crowd.

We have struck a peculiar tax. The government has decreed that 80 pfennig will buy an adequate meal, so if one spends more than this at any one meal, one must pay a tax. Another thing that we noticed is that men go through the crowd with trays of small bottles (about 20 c.c. in size) containing wines or brandy. Cherry brandy seems to be most popular. Butter has had the price raised and set by the government so that it is about 60 cents a pound. The result is that the average meal includes bread but no butter.

We went on a rubber-neck bus today for a sight-seeing trip. This had a glass roof as well as sides, so we could see tops of buildings through the roof. The ballyhoo man told me that he learned his English in America. When I asked him "Where"? he told me in the German camp in Georgia during the war. He remarked that he lost everything but his health during that time.

We are learning what a big part the Hitler salute is in life here. Doctors salute nurses. Employers salute employees. One cannot go a block without seeing it used. We only hope we will recognize when to use it so as not to get "crowned" as some Americans already have.

A trip in a rubber-neck bus to Potsdam was very interesting. We were shown the old barracks where 70,000 soldiers were housed. The famous Sans Souci with its palisades of tropical plants all under glass. The view is quite similar to Versailles. We saw many babies in perambulators. It was interesting to note that these were all painted white instead of black as in the United States. The former palace of the Kaiser is now a museum. Before entering one must slip on felt slippers before cross-

ing the wonderful inlaid wooden floors. Much of the original furniture is in place. The guide was very honest, apparently, in telling us that the pictures in many cases were copies of originals that had hung in those places, but had been removed to Holland by the Kaiser. However, some by Ruben, Bemmet, Peré and others were still in place. The guide mentioned several times that Roosevelt had been in various rooms, and sat in certain chairs. The one room that impressed me most had a dome lined with shells, crystal and silver chandelier, and the walls were covered to a great extent with precious stones in the rough, topaz, agate, carnelian, many types of amber, ore heavy in gold, petrified wood, quartz, and many others. The original tapestries in many rooms were in place. Some of the light blues have faded so that the walls gave the impression of old, old wall paper. One floor was a wonderful combination of rosewood, maple, and mahogany. Some of the chandeliers of delicately made porcelain were immense. The old spinets and old clocks were still in place. One little clock was still running after 400 years.

In Sans Souci, I was especially interested in a room made in honor of Voltaire, a monkey on one side because Voltaire was homely, a squirrel eating sweets because Voltaire loved sweets, and a parrot because Voltaire liked to talk. Evidently Frederick the Great was a great lover of Voltaire.

The old military church at Potsdam was shown also as a sort of museum. The old flags of many wars were still in place, where they had been put in former days. The caskets of Frederick the Great and his son were surrounded with old army flags. Most prominent of all was the new Hitler flag with the swastika. When Hitler addressed the troops about a year ago, a small stand in gold was erected in front of the pulpit, so he did assume the position of a minister of the gospel. This is left in place. It seems that the Kaiser did not approve of long church services, so in front of the pulpit is a beautiful hour glass. I do not know just how long it takes the sand to run through, but I can recall many church services in America where a similar device would have been useful.

We then went to the dog cemetery where Frederick the Great buried his favorite dogs and where he wanted to be buried. A stone slab with the name of the dog shows each grave.

Next we went to the resting place of the Kaiser's wife, which is an old museum converted into a mausoleum. Many fresh floral pieces were seen here, and here again the new German flag was prominent. In front of one of the buildings was a guard marching back and forth. Instead of a gun, he carried a shovel and had on khaki uniform, so I interpreted that the workers' army must at times do certain types of military service.

Yesterday we went to the Zoological Gardens. Here we found one of the finest in the world. The collection of snakes is, I believe, the most complete anywhere in the world. The aquarium has fresh water life on one side and seawater life on the other. Two interesting examples of cross-breeding were seen: A bastard from crossing a lion and a tiger, and a bastard from a wolf and a dog. Speaking of cross-breeding, a biologist here is cross-breeding maggots to improve the strain to be used in treatment of osteomyelitis. It being a poor season to see the zoo, we made a rather hurried visit. The most spectacular arrangement for confinement was that of the seals. The setting was that of a waterfont with small cliffs for the seals to climb up.

Arriving in Berlin at night, we were struck by the extensive electrical displays. Certainly the Germans are ingenious at developing methods of lighting. The little bed lamps are unusually clever.

The University of Berlin has a department for supervising work for foreign students. They make out a program according to the length of your stay from one day to a year, and are very courteous about it. There are no organized courses in medicine, except for exchange students who go for a year or more. We are now starting our real work here and will write later about it. So many uniforms are seen on the streets, that one becomes very confused. This surely is a country of uniforms. The black uniforms are the personal guard of Hitler. A brown uniform is somewhat like our khaki and is the storm troop. A tan uniform is worn by the labor troop. These are similar to our CCC boys and ordinarily would be on the dole. The work and the uniform seem to do a lot toward keeping up their morale. The blue-green uniforms are the

regular army. One of these on guard was so much like a statue that I had to wait for him to wink to be sure he was alive.

There is some sort of celebration every week or two. Everyone salutes high and low and says the word, heil. The general nourishment seems to be very good, but one sees many boys of fifteen or sixteen years who have not grown very tall. In fact, one feels that they were stunted in some way.

The cost of lodging is very moderate, but the cost of food in restaurants is higher than in the United States. Beer averages one-half mark for an eight ounce glass or about 20 cents. Wines cost about the same as in the United States. In one restaurant butter cost us 30 pfennig or 12 cents.

The transportation system is very fine. On the elevated, each depot has a big map and tells where you are. The cost is about the same as in the United States. In transporting a trunk one must buy an extra ticket for the trunk to ride on to any of the stations in the city, a matter of 5 to 10 cents.

Politics are interesting, but I will wait until I am in Vienna to write my impressions.

We have met only one doctor who speaks English fluently. This noon we lunched in the same room with Dr. Hjalmar Schacht, and a German doctor with us remarked on the wonderful nervous system this man had. Nothing ever seems to bother him or raise his blood pressure. When he closes his desk at night nothing in the shape of worry seems to follow him.

In making inquiry about poverty here, one learns that there is plenty, but on the streets one does not see it. The poor people are very proud and keep one good dress or suit to appear in public. They are always clean and their shoes are shined, but they live in one or two rooms and barely have enough to exist on. Begging is absolutely forbidden. The newspapers are all sold by war veterans or old women. I saw an old man going along the street picking up coal that had dropped from passing wagons.

The housing problem is interesting. We noticed long rows of apartment houses fairly new. These are built by corporations. Many plans have been worked out. Here would be one. A man buys a share in the corporation and after completion he moves into a flat. He pays rent over a period of years and then owns his flat. The government is encouraging these plans by making them tax-free for a fairly long period. A lecturer on America, here last week, mentioned the large number of home owners in the United States. This was very surprising to the Germans.

I had a talk with the Chief of the Krankenkasse today, and he says that since the present government took charge there has been a complete reorganization of the sick benefit plan, so that now the doctors are very much better off and are very contented. This change has been in effect only in the last year. He says many doctors now make very good incomes and are satisfied. He stated that 46 per cent of the doctors in Berlin today are of Jewish descent in spite of the fact that we, in America, thought all Jews were put out of business. At present the lay people in the Insurance Health Program have been cut, and now the control is really with the doctors. Formerly the head man in Berlin made about 100,000 marks a year, and now about 7,000. He further said that only one case of primary lues was found in the last four weeks.

One sees many cases like our brief cases. I was not sure what they were but find them used for everything. A big, fat woman pulled a sandwich out of one at a show and munched away on it. In the middle of a show, we have a twenty minute interval and the entire audience goes out and has beer. From the appearance of cafes and eating places, there is no poverty in Berlin. Surely they spend plenty for drinks, and drinks are high. A schuper of beer costs from 15 to 20 cents.

We were invited to see the state horse barns about fifty miles from Berlin. Here they specialized in breeding studs and send the studs out through the state. The type of animal is one well-suited for military purposes.

We rode in a German-made Ford. It is a 4-cylinder car and is very low and small. There is no running board. It travels along very well, but is rather rough riding.

In summing up the military situation, my impression is that never was Germany more military-minded than she is today. Uniforms and drills are seen everywhere.

As to Hitler, I hesitate to say much, but must admit that everyone says that Germany is more prosperous and much more safe to live in than it was before his regime. The

future was brought home to me best by a lady, who stated, "Hitler has done wonders for Germany, but some of us are skeptical as to the future." "We wonder whether he has passed his highwater mark." One feels that many people are not fully expressing themselves. Mail of Americans to America is notably unsatisfactory. Much of it is held up in Germany and the German officials always blame America for this. They do not admit censoring mail. The Jews have taken an awful sock on the jaw. The Kaiser said he could not have a pauper nobility, so encouraged marriage with wealthy Jews. These now are suffering more than the foreign Jew. Even after many have been put out of business, 46 per cent of the doctors in Berlin, as stated, are Jews. Before Hitler, 65 per cent of the city officers of Cologne were Jews. These have all been replaced by Aryans.

The care of venereal disease is very severe. Cases must be reported and are hospitalized until non-contagious. A large Frauen Clinic reported only two gonococcus infections in three months. The head of the health department told me that only one case of primary lues was reported last month, and he feels lues is rapidly becoming extinct here in Berlin. There is definite propaganda for more and larger families, and, as a result, illegitimate children have been reduced 52 per cent.

There is in process of organization a system of post-graduate medicine that will appeal to American doctors. The American Institute of Berlin University is sponsoring this at present. Courses are to be given in English. I attended some of the eight of the larger Clinics in Surgery and Gynecology. I was received and shown more than ordinary courtesy in most of these. I saw some very good surgery and some rather inferior. In at least four places they tried to impress me with the speed in doing operations. When I saw a day's list boarded at eighteen major operations to be done by one man, I felt that it was more mass production than anything like we do. One method used to speed up the work was to close the peritoneum, muscle, fascia, and skin wall with through-and-through interrupted sutures.

We went from Berlin to Nurnberg and had a peculiar experience. We got on trains according to directions of the uniformed men. It seems there are two routes that may be taken, and we were directed to take the longer route, so when we were almost to our destination, some officials came and demanded two and one-half marks more because we had only paid for the short way and had come the long way. So we had an hour's extra ride for two and one-half marks. Nurnberg we found populated by an entirely different type of people. The men are husky and well nourished. There are plenty of women, who do not hurt one's eyes to look at. They are much better looking and more pleasant than those in Berlin. The old castle and city walls with the moat are familiar to all. Of all the things we saw, the instruments of torture that they have collected in the old castle were most interesting to me. The pincher device to be applied to the fingers of musicians who play badly might well be adopted in America, and applied to some of our jazz bands. We found that our money did not go very far in Nurnberg. Even though it is the home of toys, we found toys very costly. On the contrary, jewelry has been marked down and is very reasonable.

We then went to Munich and here I felt the cold more than any place I have ever been. The store windows were more like our American windows. There is a tendency to overcrowd the displays. Here the men wear broad brimmed hats with usually a cockade of squirrel tail at the back. This is especially true of the highlanders when they come to town. Here also, there is no external evidence of poverty. All are well-clothed. The show windows are full of "nifty" sport clothes for skiing. On talking to one of the ladies about how much more friendly the girls were than those in Berlin, she said, "We think the Berlin girls are schnauzy (stuck-up) and Berlin girls say we are dumb heads." Powder and paint are seldom seen in Munich. With the marvelous museum and art galleries, one misses a great deal in passing Munich by. At one o'clock on the cathedral clock, there is a beautiful chime that plays a German song and then iron men on horseback with lances appear and go in front until one knocks the other over with the lance. This is followed by a similar group of dancers. It is much on the principle of the cuckoo clock.

We had a beautiful clear day going from Munich to Vienna. The season is much

warmer than common, so there was no snow except on tops of mountains where it is always found. Vienna is in a big saucer surrounded by hills. Our first impression of people was that they are not nearly as well-dressed as in Germany, and they give the idea of being completely discouraged, licked, and depressed. Some 20 million people were taken away from Austria after the war, and many blame Woodrow Wilson for this. They are trying small manufacturing, but the cost of raw material makes competition so severe that they are not doing well. They hoped to save themselves by selling wine to the United States, but Italy beat them by selling a better wine cheaper. Then they hoped foreign students would help. Students from the United States are 75 per cent below normal. Students from Poland and Czechoslovakia are going to Paris because educational standards are much lower than in Vienna. Formerly this was a big item. The general run of Viennese do not want to join Germany under Hitler, because they hate Hitler for deserting Austria where he was born, and going to Germany. Also they are not Nazi in their leanings. They do not want to join Italy because of racial and language differences, although Italy is really the only Santa Claus in sight. The law prevents money being sent out of the country. This causes some "bootlegging" of money and foreign checks. I was surprised to learn that Dollfuss was not popular with the common people.

We found an interesting method of burying royalty. The body is placed in a casket in one church, the heart in a casket in another church and the intestines in a third.

The left hand driving in Vienna is disconcerting to one who drives as we do. Also, it makes crossing the street a hazard for us. There are not so many bicycles here as there are in Berlin.

(To be continued)

TEMPORAL LOBE ABSCESS OF OTITIC ORIGIN

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"Almost half of the abscesses located within the substance of the brain follow otitic infections." This estimate taken from the report in the April *Archives of Otolaryngology* by Courville and Nielson is an average of seventy-four cases of abscess of the brain found in doing 10,000 autopsies. Two-thirds of these otitic abscesses were in the temporal lobe.

They state that "cerebral abscesses consequent to otitis media and mastoiditis are the result of extension of infection into the intracranial space by one of two types of paths: (1) by way of contiguous structures, the infection extending through the tegmen tympani into the temporal lobe, and (2) by way of the venous system, through retrograde extension of the infection into the inferior cerebral or the inferior anastomotic veins to more distant points."

The following cases are representative of the first type of invasion.

The first patient, Leota C., aged ten, was admitted to Sparrow Hospital, Lansing, Michigan, on February 13, 1934. She complained of a "terrible" pain in the right side of her forehead.

Four weeks before admission she became ill with what her family physician described as a hemolytic streptococcus pharyngitis. An acute otitis media developed on the right and a paracentesis was performed. The ear drained profusely for two weeks without discomfort and then gradually ceased draining about ten days before admission. Three days before admission she became extremely irritable and began to cry, and scream, with pain in the right frontal region. There was marked nausea and frequent vomiting which did not become projectile. Two days before admission a fecal impaction was discovered by her attending physician.

On admission her temperature was 98.6, pulse 70, and respirations 24. She appeared acutely and severely ill with a peculiar apprehensive, dull stare. She moaned constantly, occasionally breaking out with a wild scream and much of the time appearing quite irrational. She continued, however, to constantly hold the right temporal region and complain of the "terrible" headache. Her most comfortable position seemed to be on the right side with her knees flexed and drawn up under her chin.

On examination the left membrana tympana was normal. The right was intact but dull red and thickened with all landmarks obscured. There was no bulging of the drum and no drooping or edema of the posterior superior canal wall. The right mastoid

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was tender over the antrum and tip and there was tenderness on percussion over the right temporal region.

The eyes showed no palsies or nystagmus. The pupils reacted normally and the fundus examination by Dr. Loree showed only a slight neuroretitinitis on the two sides.

Except for the neurological findings the rest of the examination was negative. Neurologically there was a marked clouding of the sensorium, a suggestive Babinski on the left and sluggist biceps, triceps and knee jerks. The right arm presented a definite adiadokokinesis, but there was no difficulty in recognizing objects placed in either hand. The Kernig and Rhomberg tests were normal and there was no ataxia on walking.

The urine examination was negative. The hemoglobin was 75 per cent, red blood cells 4.5 million and leukocytes 17,900 with 93 per cent polymorphonuclears. The following day the leukocyte count was 28,000. Spinal fluid was removed drop by drop and was found to be under greatly increased pressure. It was clear and showed no bacteria. There were 300 cells per cubic mm. most of them lymphocytes. Albumin and globulin were both increased. Culture was negative and the gold curve 1222333211.

X-ray examination of the mastoids revealed haziness and considerable cellular destruction on the right side. There was no extensive pneumatization of the petrous bone or evidence of petrositis. Because the symptoms were so extreme, and the signs so suggestive a tentative diagnosis of temporal lobe abscess, right, was made previous to the mastoid operation.

At operation only a small amount of bloody serum appeared following myringotomy. The mastoid cortex was extremely thick and covered an almost completely destroyed cavity. The few cell walls that remained were necrotic but there was no free pus present. The sigmoid sinus was covered with a few pale granulations but was obviously patent. Infected necrotic cells at the roof were removed exposing thickened, indurated dura over the temporal lobe, which seemed under greatly increased pressure. In removing the bony angle of Troutman's triangle, in order to effect a large decompression of the temporal lobe, the sigmoid sinus wall was torn and it had to be obliterated. The indurated, thickened nonpulsating area of dura proved to be about 2 cm. in diameter. The inner plate was removed to surround it with 0.25 cm. of healthy dura.

It seemed perfectly obvious that the pathological change in the mastoid could not be responsible for the intense headache, the nausea and vomiting, the leukocytosis or the spinal fluid findings. Accordingly the temporal dural exposure was ringed with the coagulating current in order to produce adhesions. The mastoid cavity was packed wide open.

For the next three days her temperature remained slightly subnormal and her pulse around 60. She complained bitterly of severe headache and pain in her right eye. There was constant nausea and occasional regurgitant vomiting. During this period she was irrational much of the time. Visual fields were attempted but gave little information because of the lack of coöperation.

Four days after the first stage operation the packing was removed and the cavity carefully cleansed. Tincture of iodine was painted over the dura and a small nick made in the most dependent portion of its herniation. A large spinal puncture needle with obturator was inserted anteriorly and on the second attempt entered an abscess cavity with a firm capsule. About three drams of seroflocculant pus was allowed to escape and long bayonet forceps were inserted along the needle, into the abscess cavity. Through these forceps a rubber drain was inserted and its outer end split and sutured to the skin margins. The wound around the tube was packed open. She was given 500 c.c. of saline and returned to bed. Culture of the pus from the abscess was reported as hemolytic streptococcus.

On reacting from the anesthetic there was noted a paralysis of the right external rectus muscle and she complained of diplopia. Later severe pain in the occipital region and back gave us cause for considerable worry.

She had a rather uncomplicated convalescence, however, and a month after operation was discharged from the hospital. She returned to school and passed her grade. About two months after operation the 6th nerve palsy had completely disappeared and the wound healed. Pulsation at the upper angle of the wound suggested a temporal lobe hernia into the mastoid cavity.

The second case is that of Norma C., aged seven, who was admitted to Sparrow Hospital, February 6, 1934, seven days previous to the first case. She complained of draining ears with severe pain.

Two weeks before admission she had an acute respiratory infection with spontaneous drainage from both ears and a very high fever. She was assigned to a staff member on admission and x-ray examination of her mastoids was ordered. They were reported as being normal, so expectant treatment was followed. X-ray examination was made again ten days later and again the report showed little destruction. By this time she was becoming very toxic and running a temperature from 97 to 102 with a leukocytosis of 17,000.

I was called in consultation February 16. The patient appeared anemic, pale, septic and very ill. frequently crying with pain in the right mastoid region. Both external auditory canals were filled with seropurulent discharge pulsating from inferior perforations. There was drooping and narrowing of both canals and mastoid tenderness on both sides. The remainder of the examination was negative. Her urine was normal, the hemoglobin 70 per cent, red blood cells 3,950,000, and leukocytes 17,000 with 81 per cent polynuclears.

According to my interpretation of the mastoid films there was definite loss of cellular outline in both mastoids and this with the clinical signs and appearance of toxicity led me to advise immediate bilateral mastoidectomy.

At operation only the deep cells of the mastoids appeared extensively involved. On the left side there was an almond-sized extradural abscess over the dura of the temporal lobe. The dura in this area was covered with a few granulations but did not seem tense or show loss of pulsation. The inner plate was removed until the normal dura surrounded this area. Both sigmoid sinuses were uncovered and found to be normal. Hemolytic streptococcus was cultured from both mastoids.

Two days after operation she began complaining of pain in the left eye, her temperature remained around 101 and she became rather irritable. Six days after operation she complained constantly of pain in her eyes, her temperature became subnormal; the pulse dropped from 94 to 60 and she refused all nourishment. Her white blood count was 12,000 with 81 per cent polynuclears.

Two days later she was complaining constantly of pain in the left eye with marked photophobia. Both fundi showed venous congestion but no definite choking. Spinal fluid was withdrawn very slowly and found to be under increased pressure. It was clear with 150 cells, mostly lymphocytes and with slight increase in albumin and globulin. There were no bacteria.

The following day she was semi-conscious, yawning frequently and screaming in her sleep and inclined to lie on her left side with her knees drawn up. Her temperature was 98, pulse 56. She was examined by a neurologist, Dr. C. Bradford, who felt that there must be an intracranial collection of pus but could not localize it as there were no definite neurological findings. She recognized objects and named them properly but would not coöperate for visual fields.

The next day she was in a coma with a temperature of 97, pulse 50 and respirations 16 per minute. Fluids were given subcutaneously and 250 c.c. of blood given by vein. The following day her temperature suddenly shot to 104 and pulse to 120 and she regained consciousness. We were afraid the abscess had ruptured into a ventricle or onto the surface of the brain, relieving the pressure. Fundus examination revealed a choking of three diopters on the left and one on the right. Slight puffiness of the lids and slight proptosis of the left eye appeared.

On March 3, her temperature was 99.4, pulse 70 and respirations 24. She was somewhat more active and quite rational but complained of extreme pain in the left eye. Five hundred c.c. of glucose and saline was given subcutaneously. We had been at a loss to explain the presence of an intracranial abscess without anomia or other localizing signs. The left was the logical side because of the extradural abscess and the more severe pain in the left eye, but there was no evidence of a naming aphasia that was to be expected with a left temporosphenoidal abscess. This situation was being explained to her family when they exclaimed that: "she was left-handed when a baby and was taught to use the right hand." This factor seemed to account for the lack of localizing signs, as undoubtedly her silent area was on the left rather than the right side.

The left mastoid cavity was reopened and showed a complete lack of granulation. The bony walls were as shiny and bare as at the end of the mastoidectomy, 12 days before. The temporal lobe dural exposure had permitted considerable herniation and the dura was nonpulsile, hard and thick. The cavity was very carefully cleansed by irrigation and swabbing with peroxide and then alcohol. The tense dura was painted with tincture of iodine and a 2 mm. incision made through it. A large spinal puncture needle with obturator was then inserted and at a distance of less than 0.5 cm. passed through a very tough capsule and into a large abscess cavity. Seropurulent discharge with clumps of pus poured out of the needle when the obturator was removed. Again bayonet forceps were inserted along the needle into the cavity, round rubber tubing inserted, the outer end split and sutured to the skin edges. The mastoid cavity was packed wide open with iodoform gauze.

Shortly after the operation she recognized her parents for the first time in six days but she did not remember any past events in the hospital. The drainage tube was left in place until forced out a week after operation. She remained extremely irritable and had to be kept under sedatives constantly and shortly began to complain of severe pain in the left eye again with marked photophobia. Two weeks after the drainage of the abscess, continuous pain and photophobia with a rising white blood count and a slowing of the pulse rate suggested another abscess in the temporal lobe.

As an emergency measure on March 15, the temporal lobe was probed anterior to the first abscess and another abscess cavity with a thick wall was entered and a large amount of seroflocculent pus drained out. Again a round rubber drain was inserted and sutured to the skin edges. This tube was pushed out in about five days. Following this, temperature, pulse, respiration and blood count became normal but she became very noisy and extremely irritable.

As she constantly cried to go home, in desperation, we finally discharged her from the hospital.

After about three days of home discipline she quieted down and progressed to a satisfactory recovery with no signs or symptoms of impaired cerebral function. At present the mastoid cavity is open with slight daily drainage and no sign of granulation, so plastic procedures will be necessary later. She returned to school and passed her grade but her mother states that her entire personality has changed. Where formerly she was very quiet and retiring, she is now alert, boisterous and at times very facetious.

I have discussed these two cases with several brain surgeons and they all have roundly condemned me for my method of attack. They quote the surgical axiom that "the brain should not be entered through an infected cavity." Pointing out that if your diagnosis is wrong, your patient will almost certainly develop a meningitis or brain abscess, or both. They recommend that once the diagnosis of a temporal lobe abscess is made it should be searched for and drained through a decompression exposure that is removed from the infected mastoid wound.

If the dura is found necrotic and adherent with a fistula or evidence of a stalk, they state that the probabilities of a chronic encapsulated abscess are great and puncture should be made along this tract which would be walled-off both from the cerebral tissue and the meninges. The object here is to establish and maintain drainage with the least danger of breaking down protective adhesions. Unfortunately the cases with a stalk are in the minority.

For the majority of cases with no visible evidence of dural involvement, textbooks and brain surgeons alike advise a new exposure. These exposures may be one of three types. The temporal decompression route of Sharpe has much to recommend it in cases where localization is doubtful. The incision begins above the posterior end of the zygoma and extends vertically for 3 inches. The bone is removed over a 3 by 2½ inch area and the dura opened vertically for 2½ inches. After repair the temporal muscle gives support as in temporal decompression for dangerous intracranial pressure. Drainage of the abscess cavity is usually maintained by rubber tube or Mosher wire basket.

The second type is that used by Eagleton.

It is an osteoplastic flap which has for its object a large exposure low enough to allow complete examination of the pyramid bone for intradural collections of pus, a proceeding imperfectly accomplished by other methods; and permitting an aseptic closure if no abscess is located. Its disadvantages are the accompanying shock, the length of time required and the need for higher technical skill in brain surgery. In case an abscess is located the resulting infection of the flap with more or less necrosis of the bony portion is probable.

And then there is the method of King based on observations of brain injuries in the World War. His technic involves excision of all the brain tissue between the cortex and abscess cavity and incision of the dura to favor eversion of the cavity by the formation of a hernia. He combats the infection by the use of Dakin's solution. In the hands of its originator this procedure has been very successful and he has reported four consecutive recoveries following this type of approach. Most other temporal-lobe abscess statistics emphasize the very high percentage of mortality, varying from 50 to 75 per cent, and they would doubtless be much higher if all the unsuccessful cases were reported.

The brain surgeons condemn any but an extensive shock, provoking temporal exposure, yet admit that their results are very discouraging. Contrast that with the report in the May, 1933, *Archives of Otolaryngology* by Faunce and Shambaugh. They discussed six consecutive cases of otitic abscess of the brain on the service of Dr. D. Harold Walker at the Massachusetts Eye and Ear Infirmary. Five of these patients recovered following surgical drainage through the mastoid cavity by the method used in the cases reported here. They failed to locate the abscess in one case and the patient died four days after exploration. Autopsy revealed two abscesses, one in the right temporal lobe superiorly, nearly in the parietal lobe, and the other posteriorly nearly in the occipital lobe. The most interesting observation was the lack of infection along the exploration tracts and the absence of any meningitis other than the local change of the exposed dura. Courville and Nielson, however, have reported a case of cerebral abscess due to probing. "Along the needle track to the ventricle were found granulation tissue and pus formation, infection having been carried into the brain by the exploratory puncture."

There is another surgical axiom, or at least it may be considered a fairly constant rule, that otitic infections that invade the intracranial structures through preformed channels, such as the internal auditory canal or the labyrinth, cause a diffuse meningitis; while infections invading it by other channels are more apt to produce an abscess. The logic of this is quite clear. The virulent infection which invades the intracranial structures through a preformed pathway strikes them entirely unprepared and becomes disseminated before their defenses have been marshalled. The infection that invades by the necrosis of bone and accompanying thrombosis of vessels has lost much of its virulence on reaching the dura and finds it well prepared to resist further advance; so well walled off in fact that an extradural abscess usually results. Occasionally the thrombosis or direct extension of the infection progresses along the pial veins and continues to their ultimate ramification in the white substance of the brain. Here due to stasis an abscess develops with a capsule of glial tissue and lymphocytes that have been transformed into connective tissue.

It is certainly true that the brain has the ability to wall off, divide and absorb small abscesses. It also must be true that the temporal lobe in the region of an extradural abscess or along the path of a progressively thrombosing vein must develop considerable immunity to that particular infection. The defenses must be greatly augmented by a large dural exposure, especially if the coagulating current is used to produce adhesions around the exposed dura. So by the time a search is made for a temporal lobe abscess there is no stalk present leading from the abscess to the exposed dura; but there must be an intervening section of cortical tissue that has a high degree of immunity to the mastoid infection. And certainly having located the abscess it is safer to drain it through this area than through temporal cortex that is entirely unprepared.

If there is grave doubt as to the diagnosis then there is no doubt that a temporal decompression is the safest means of making a search of the temporal lobe. But if in the operator's mind there is little doubt of the

presence of an abscess, then the two-stage method of drainage through the mastoid cavity appeals to me as offering a better chance of success in the hands of the otologist, who is usually the one called on to care for these cases.

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CORONARY THROMBOSIS WITH PAROXYSMAL VENTRICULAR TACHYCARDIA

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Individual cases are frequently very instructive both from a diagnostic and a therapeutic standpoint. Sir James MacKenzie said, "If we are to make any progress in the medicine of the future, it will be through the interpretation of early symptoms."

In characterizing Osler, the teacher, W. S. Thayer wrote, "Observe, record, tabulate, communicate. Medicine is learned by the bedside and not in the classroom."

The case I am presenting is interesting for the following reasons:

1. Incorrectly diagnosed for a few days.
2. The electrocardiograms were not very characteristic of a coronary accident for several days had not the history been obtainable.
3. Paroxysmal ventricular tachycardia of twelve hours' duration.
4. The treatment with quinidine.
5. A change in the electrocardiogram for the day following the tachycardia and then on the second day following the tachycardia a return to the first picture of left coronary accident, four months later back again almost to the original curve.

Case Abstract

A single man, forty-eight years old, 5 feet 10¾ inches in height, weight 208 pounds, was seen by his physician on April 5, 1933. He complained of several short stabbing pains under the sternum with some numbness in his left arm to the extent that he could not hold his cigar. This attack, which followed a hasty luncheon, lasted from about two to six o'clock, the pain recurring at intervals of thirty seconds to five minutes. The question arose as to whether the pain was due to a mild heart attack or "acute indigestion." He was given some soda with no noticeable relief. The discomfort passed off and, feeling well for six to seven days, he went to Northern Michigan to his summer home. He worked out of doors all the first day there and as a result felt very tired in the evening. He ate his evening meal rapidly, following it with one high ball. Later, he retired to a cold bed that had not been aired. During the night, he had a slight feeling of fullness in the epigastrium for which he arose and took some soda. Shortly after, the discomfort began again under the sternum and became progressively worse. After an hour or two, he called a doctor who immediately sent him to the hospital where he was given a hypodermic (presumably morphine) and stupes to his abdomen. Again the diagnosis was "acute indigestion." The patient later stated that his systolic blood pressure was between 120 and 140 at that time. He remained in the hospital for two days and then, as there was no improvement, he got up and drove back to his city home two hundred and thirty miles away. En route, however, he had to stop three or four times and sleep for about ten minutes. He stated it was almost impossible to stay awake and that he had considerable pain in his precordium and generalized weakness. The day after his return, the pain continued —at which time the writer first saw the patient and sent him to the hospital.

The mother died of apoplexy at seventy-eight. There is one sister living who has heart trouble.

The patient was an occasional drinker; smoked a great deal but did not inhale; drank neither coffee nor tea.

Physical examination.—The patient looked acutely ill and was apprehensive; slight cyanosis. *Temperature* 101.2; *Pulse* 100; *Respiration* 26. *Heart:* To percussion, apex one centimeter outside of left midclavicular line; two centimeters to right from midsternal line; great vessels five centimeters. No thrills; sounds of fair quality; regular rhythm; slight accentuation of first sound at apex; no gallop rhythm. Definite friction rub to left of sternum. Blood pressure 104/80 m.m. of mercury.

Laboratory findings.—

4/19/33 Hemoglobin 93 per cent (Sahli); red blood cells 4,460,000 per c.mm.; white blood cells 11,750; myelocytes 2 per cent; stab forms 7 per cent; segmented forms 68 per cent; lymphocytes 23 per cent.
4/25/33 White blood cells 8,750.
5/ 1/33 White blood cells 13,100.
5/ 6/33 White blood cells 8,400.
4/19/33 Urine showed a slight trace of albumin.

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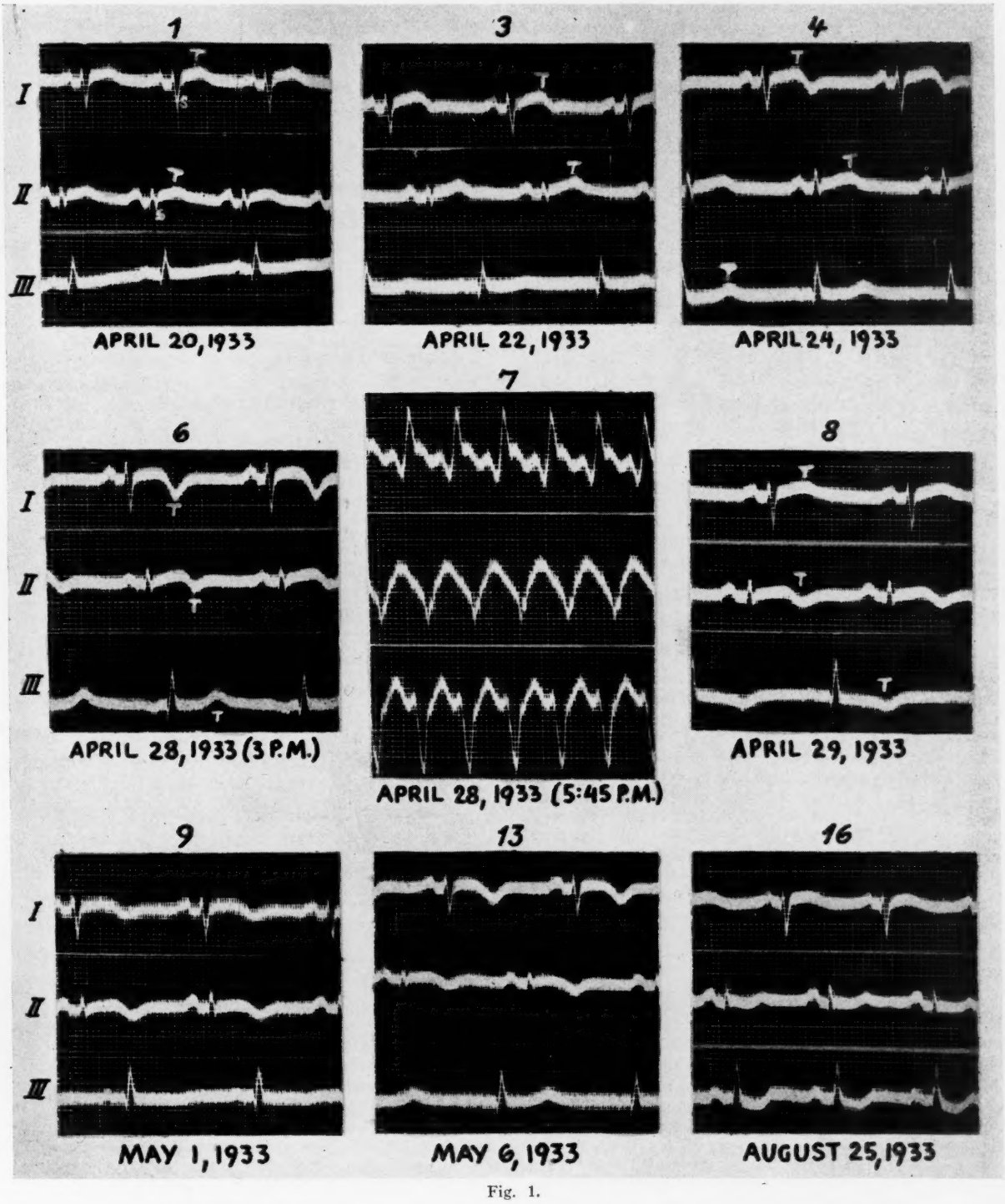

Fig. 1.

4/21/33 Blood non-protein nitrogen: 53.1 mgs. per 100 c.c. of blood; 5/1/33 45.4 mgs. Wassermann; negative.
4/21/33 Sedimentation rate; 18 m.m. in 30 minutes.
4/25/33 Sedimentation rate; 18 m.m. in 1 hour, 20 minutes.
5/ 6/33 Sedimentation rate; 18 m.m. in 1 hour, 30 minutes.

Treatment.—Morphine sulphate grains ¼ were given every four hours for the first few days. The patient was placed on a liquid diet. Quinidine sulphate grains 3 were given three times a day; metaphyllin grains 1½ were given three times a day; phenobarbital grains ½ were given three times a day; amytal grains three every night.

Progress.—Temperature dropped slowly and became practically normal on the eighth day. Pulse by fifth day had slowed to 75. Friction rub disappeared two days after noted. On the third day in hospital, blood pressure dropped to 80/50.

April 28, 1933, fourteenth day following coronary accident:

3:30 P. M.: Temperature 98.3; pulse 68; respirations 18; comfortable; EKG taken; color good; not perspiring; heart sounds faint but fair quality—no thrills, no murmurs, sounds at base very distinct; blood pressure 80/50.

5:30 P. M.: Suddenly patient complained of substernal pain. Pulse impossible to count.

5:45 P. M.: Heart showed a very poor quality; quite regular rhythm at about 170 with slight variation in quality of first sound at apex; unable to get any blood pressure reading; patient perspired; slightly restless. EKG taken which confirmed the diagnosis of Paroxysmal Ventricular Tachycardia.

6:15 P. M.: Quinidine sulphate, grains 6 by mouth. Apex rate counted by auscultation every fifteen minutes.

8:15 P. M.: No change in rate; quinidine sulphate, grains 6; rate 170.

8:50 P. M.: Morphine sulphate, grains ¼ for restlessness; perspiring a little.

10:15 P. M.: No change in rate, 168; quinidine sulphate, grains 6.

12:15 A. M.: Apex rate 162; perspiring freely; resting fairly comfortable; quinidine sulphate increased to grains 9 because of no break in rate.

2:15 A. M.: Rate 156; patient very nauseated but unable to vomit; expelling flatus freely; morphine sulphate, grains ¼.

3:10 A. M.: Rate 156; quinidine sulphate, grains 9.

4:35 A. M.: Rate 142.

5:00 A. M.: Rate 102; patient cold and clammy.

5:10 A. M.: Temperature 96.2; pulse 68; milk, 2 ounces, Spiritus frumenti, ½ ounce taken.

It may be noted that at 2:15 A. M. there were toxic signs of quinidine; but as the rate was not lowered and the drug is rapidly eliminated, it was given again at 3:10 A. M. From then on the rate became progressively slower and two hours later when the next dose was due, the rate was about normal. To prevent too much depression of the heart muscle causing sino-auricular block, of standstill of the auricle or the whole heart, or of ventricular fibrillation, quinidine was then discontinued. But with fear that the tachycardia might resume, quinidine was then started at 3 P. M. and given for two weeks every four hours day and night.

The patient gradually improved and was discharged to his home in an ambulance, on May 11. During the fifth week, he began to sit up a little every day and in about two months from the onset he was able to go out of doors for short walks without any discomfort. His systolic blood pressure rose to 112-120; his diastolic to 70.

April 5, 1934. One year from onset of symptoms the patient was able to carry on his normal duties quite comfortably. Occasionally, he complains of a tachycardia and mild sub-sternal pain, but these are most noticeable when he has broken his regime of stated rest, no smoking, and diet. He has been taking digitalis and metaphyllin.

Electrocardiograms. — Electrocardiograms were taken almost every day. Only the most illuminating ones are shown here. There is a tendency to low voltage and right axis deviation throughout. It is interesting that the true picture of a coronary thrombosis did not appear in the electrocardiogram for almost ten days following the accident. Of course, with the history and physical examination, the electrocardiogram gave suspicion of this condition. The difference in the curve on the day following the paroxysmal ventricular tachycardia was undoubtedly due to the quinidine.

4/20/33 No. 1 S-T interval in leads I and II slightly elevated; T III flat.
4/22/33 No. 3 } The gradual inversion of T I & T II.
4/24/33 No. 4 }
4/28/33 3 P. M. No. 6 Coronary T-waves leads I and II with upright T III.
4/28/33 5:45 P. M. No. 7 Paroxysmal Ventricular Tachycardia.
4/29/33 No. 8 Inversion of T II and T III; T I upright.
5/ 1/33 No. 9-14 return to the picture of No. 6.
8/25/33 No. 16 Similar to curve No. 1 except for inverted T III.

Summary

1. A case of coronary thrombosis is presented, illustrating a common error in diagnosis; namely, acute indigestion.
2. The appearance of ventricular tachycardia and its successful control with quinidine sulphate.

GASOLINE AND KEROSENE POISONING IN CHILDREN

JOHN A. NUNN and FRANK M. MARTIN, San Antonio, Texas, discuss the clinical and laboratory examinations in seven cases of gasoline poisoning and sixty-five cases of kerosene poisoning. The total mortality of the cases was 11 per cent. Among the kerosene poisoning cases it was 9.2 per cent, while in the gasoline cases it was 28 per cent. In the fatal cases the children lived from two to eighteen hours after the ingestion and the aspiration of these substances. All the children who died showed definite clinical evidence of pathologic changes of the lung; namely, many moist râles in both lungs, rapid, shallow respirations and cyanosis. About one-third of the patients who had swallowed a large enough quantity of the substance to become sufficiently ill to require hospitalization had also aspirated some of the fluid. The patients who aspirated, as well as ingested, one of these petroleum products presented a much graver clinical picture, owing to the rapid development of pneumonitis, which was evidenced by cough and many moist râles throughout both lungs. In the fatal cases there were physical signs of pneumonitis. It is believed that the pneumonitis was produced by the irritating properties of these substances, while the marked evidence of involvement of the central nervous system is due to the rapid and overwhelming absorption of the volatile fractions by the pulmonary circulation, this absorption being facilitated by the thin permeable alveolar wall. The symptoms of gasoline and kerosene poisoning are apparently produced by the toxic action of these substances on the central nervous system, principally the respiratory center motor areas and the vagus center. There is apparently no loss of oxygen-carrying capacity of the blood. The prognosis may be said to be in direct ratio to the amount of the hydrocarbon that enters the lungs, and that if the patient survives several hours he recovers completely. There are practically no complications or sequelæ in this type of poisoning. The irritating effects in the lungs and the gastro-intestinal tract disappear completely in from forty-eight to seventy-two hours. Treatment consists of removing as much of the offending agent as possible by gastric lavage or emesis and laxatives. When cyanosis and other signs of respiratory embarrassment are present the use of oxygen (95 per cent) and carbon dioxide (5 per cent) has been of considerable benefit.—*Journal A. M. A.*, Aug. 18, 1934.

THE JOURNAL
OF THE
Michigan State Medical Society

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JANUARY, 1935

EDITORIAL

RECORDS

Almost any one can make and keep records. A few men do this fairly well, but it takes a real artist to make and keep good ones. No patient ever has *a complete examination,*—the body is too intricate, there are too many tests at one's command, and time and expense preclude all but a selected few. We may better speak of a *well directed examination.* A complete history of any patient would fill a book. A fine orderly record is one that tells the story, whether long or short, and records all the facts having a bearing on the diagnosis, the condition of vital organs and the patient's future, also the procedures instituted and the progress of events afterwards. The average hospital record falls far short of this.

To make and keep fine records requires time and painstaking effort, but it pays dividends in better service to patients in promoting thoroughness and clear thinking on the part of the physician, and in giving him a substantial basis for the writing of papers.

The American College of Surgeons in its standardization of hospitals found at the beginning that the hospital records of this country as a whole were in unbelievably bad condition. By steady insistence on its part and through the willingness of hospitals to coöperate they have improved enormously. To encourage the idea the Editorial Board of Surgery, Gynecology and Obstetrics in 1930 requested the Board of Regents of the College to allow them to present an annual prize to the candidate for fellowship who presented the best set of all the records which are presented as a final test for fellowship. The College each year since then has placed candidates presenting the five best sets of records on an honor roll and they are introduced with fitting laudatory comments at the annual convocation.

It is with great and justifiable pride that we note that during the past five years Michigan has had a man on the honor roll five times—in 1931, Dr. Harold A. Furlong of Pontiac, second place; in 1932, Dr. William W. McGregor of Detroit, second place; in 1933, Dr. Dean C. Burns of Petoskey, third place; Dr. E. G. Bovill, Detroit, fifth place. At the October meeting in Boston this year (1934) Dr. Clarence H. Snyder of Ann Arbor was announced as having won first place and the prize. His records were the best among the more than five hundred who received fellowship. In material terms it meant a life membership in the College, the equivalent of $500. An appropriate certificate was also presented to him. All the men mentioned deserve our hearty congratulations.

Richard P. Smith

FREDERICK G. NOVY
Scientist, Teacher, Administrator

At the last meeting of the Board of Regents of the University of Michigan official action was taken upon the retirement from active academic duties of Dr. Frederick G. Novy. On December 9 Doctor Novy reached his seventieth birthday anniversary. This event, in accordance with the rules of the University and those of the Carnegie Foundation, automatically terminated his active participation in the teaching functions of the University. The event is one of real significance to the many students and friends of Doctor Novy throughout the State and the nation.

As a scientist Doctor Novy ranks among the foremost bacteriologists of the world. As the only living disciple of Koch, he worked the then virgin field of bacteriology with such zeal that he achieved pre-eminence in the early days of bacteriological science.

His own contributions in this field are so well known that they need no reiteration. Suffice it to say that well before the close of his academic career he was an acknowledged authority and one of the world's outstanding figures in science.

As a teacher, many of the readers of this editorial will recall him as a brilliant lecturer, eminently fair, from whose lips came only scientific truth surrounded by no aura of rhetoric, embellished only by a rigid honesty of expression. His influence among medical students, however, went far beyond the mere contact of teacher and student. As one of the few remaining of an eminent group so largely responsible for the high place of Michigan's Medical School, Novy at all times was a real friend and guide to the many students who sought his counsel in matters affecting their careers. Immersed as he was in the laboratory, and a true academic figure, he nevertheless had a worldly wisdom which enabled him at all times to assume the rôle of counselor and friend.

The last five years of his University life have been devoted to the administration of the Medical School. The duties and responsibilities of this office entailed a deliberate sacrifice of his teaching and research activities. This sacrifice, however, he accepted in the same spirit that characterized his other achievements. The five years of his administration of the Medical School have been most harmonious, and he leaves the School with a united faculty genuinely regretful of his going.

Despite his seventy years, Doctor Novy is still fresh in mind and strong in bodily vigor. It is hoped that provision may be made whereby the remaining years of his usefulness can be spent in the further pursuit of those scientific truths and to the furtherance of medical knowledge to which he has already contributed so much.

ECONOMIC SECURITY

The subject is of paramount interest to everyone. The immediate interest of the medical profession, however, is the matter of health service or health security, as a part of the larger scheme of economic security, concerning which a keen interest has been manifest among members of the profession throughout the United States. There is a fear lest, in the event of state controlled medicine, the personal relations between physician and patient may be sacrificed or that some equally undesirable result may eventuate in any change from the traditional methods of practice. The President has assured us, however, that in the event of health legislation every effort will be exerted to increase rather than to retard the efficiency of medicine. What this may mean exactly, perhaps no one knows at the present time.

The medical personnel of the Committee should be assuring to the medical profession at large. Here are the members of the board: Dr. Harvey Cushing, New Haven, Conn.; Dr. Walter L. Bierring, Des Moines, Iowa; Dr. James Alexander Miller, New York; Dr. Robert B. Greenough, Boston; Dr. James D. Bruce, Ann Arbor, Mich.; Dr. Rexwald Brown, Santa Barbara, Calif.; Dr. Thomas Parran, Albany, N. Y.; Dr. George W. Crile, Cleveland; Dr. Stewart R. Roberts, Atlanta, Ga.; Dr. George M. Piersol, Philadelphia, and Dr. J. Shelton Horsley, Richmond, Va.

No body of organized medicine has been called upon to select the person who shall represent it on the board. However, it is doubtful if men more representative of the profession, by and large, could have been selected by any medical organization. They are all men of judicial temperament and character, of responsibility, and all are eminently respected not only in the positions they occupy, but in the communities from which they come. They can be depended upon to render unselfish and unbiased service.

There is a certain advantage in being represented by one whose judgment may be trusted rather than trammelling him with directions and restrictions which he may not be free to modify, should it seem wise to do so.

A reassuring feature is the technical staff among whose members are Dr. R. G. Leland and A. M. Simons of the Bureau of Economics of the American Medical Association and Dr. Nathan Sinai, former director of the Committee who made the survey of Health agencies in Michigan. The experienced technical staff will take up the work with a developed technique. It is presumed from the employment of a technical staff the medical board of advisors will investigate the subject *de novo* and not depend

to any great degree upon data already accumulated. Any movement towards a more adequate health service to the nation must be from the study of existing conditions rather than the conditions which prevailed during latter years of the inflation period.

DR. FRANK ANDREWS

To H. L. Mencken is attributed the statement that there are no poor autobiographies. They may not be masterpieces of literature, but describing as they do the life of a single species of the *genus homo*, they always have a human appeal. Carlyle has gone him one better in regard to biographies. In his life of Stirling he says, "A true delineation of the smallest man and his scene of pilgrimage through life is capable of interesting the greatest man; each man's life is a strange emblem of every man's and human portraits faithfully drawn are of all pictures the welcomest on human walls." We are happy this month in the privilege of publishing a biographical sketch of a great man, and all faithful, conscientious, general practitioners are great, who is extremely fortunate in his biographer—Dr. A. W. Crane of Kalamazoo.

At a meeting of the Lenawee County Medical Society at Adrian a complimentary banquet was held in honor of Dr. Andrews, who was made an honorary member of the County Society and also a member emeritus of the Michigan State Medical Society. We extend our congratulations.

Dr. Crane has chosen a thought-provoking title to his paper, "The Education of Frank Andrews," which he says was suggested by an autobiography that appeared a few years ago, "The Education of Henry Adams." Many members of the medical profession who have had half a century of practice are among the real scholars today in spite of the fact that their diplomas have antedated what is considered an epoch of medical history that has been more fruitful in discoveries and developments than all previous recorded time. Dr. Crane has recounted these great advances that have taken place since his subject received his medical degree from the University of Michigan. It has become almost a truism that the physician who is not constantly a student of medical literature becomes hopelessly out of date and outmoded within a very few years of his graduation. There is no such thing as a "finished education" in medicine. Like "The Education of Henry Adams," the education of every progressive physician is "finished" only when he ceases to be a member of his profession.

THE CRIPPLED CHILD ACT

There has been some expression of opinion regarding the alleged unfairness of the Crippled Child Act with particular reference to the fact that the surgical treatment has been assigned to such a small number of surgeons of the state. It should be remembered, however, that nothing evokes so much sympathy among the laity as a physical handicap, particularly if the person afflicted is a child. People, by and large, will go to almost any length to show their sympathy. This attitude toward the health of the physically handicapped is very much manifest by members of social noontide clubs, such as the Mystic Shrine, the Rotarians, Kiwanis and other organizations. The Shrine, an accessory to higher masonry, has long maintained a special hospital for the purpose of restoring the physically handicapped. In this state the Rotary Clubs have been particularly active. These organizations are composed of business and professional men who represent substantial as well as enlightened public opinion in the various cities and states. They are composed of men for the most part leaders in industry and business and professional life. Each organization contains its quota of doctors. They have set out to see that children have the best of hospital care, and logically to see that they get the best surgical treatment, which must be by trained orthopedists under whose specialty the crippled child naturally comes. They are thorough believers in specialists and they act accordingly.

Now it so happens that in Michigan the number of orthopedic surgeons is scarcely more than a baker's dozen. This is doubtless due to the fact that, up to the present time, the demand for their services has not been sufficient to call for a greater number, so that the comparatively few practising orthopedists have fallen heir to the work asked of them by the Rotarians and also by the Michigan League for the Crippled Children and similar organizations. Doubtless

many of these cases could be handled adequately by general surgeons and possibly considerable numbers by the general practitioner or internist who was willing to give them the necessary time and study, particularly those cases in which treatment consisted of splinting, or casts or jackets. Orthopedics has not been an attractive specialty to many owing to the long periods of time (extending often for years) it often demands to secure satisfactory results. Through the influence of the organizations mentioned the state has been prevailed upon to pay a fair fee for the treatment of these unfortunate children. Since the number of orthopedists is limited and the number of patients practically unlimited, the remuneration amounts to what is an enviable income under present conditions. However, that appears to be the good fortune of those who are equipped to do the work. The income would be less in proportion to the increasing numbers of those especially qualified to do the work.

1935*

Ring out, wild bells, to the wild sky,
The flying cloud, the frosty light;
The year is dying in the night;
Ring out, wild bells, and let him die.

Ring out the old, ring in the new,
Ring, happy bells, across the snow:
The year is going, let him go;
Ring out the false, ring in the true.

Ring out the grief that saps the mind,
For those that here we see no more;
Ring out the feud of rich and poor,
Ring in redress to all mankind.

Ring out a slowly dying cause,
And ancient forms of party strife;
Ring in the nobler modes of life,
With sweeter manners, purer laws.

Ring out the want, the care, the sin,
The faithless coldness of the times;
Ring out, ring out my mournful rhymes,
But ring the fuller minstrel in.

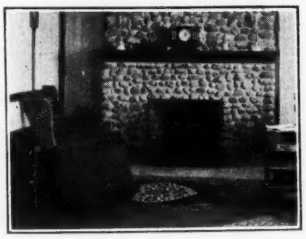
Ring out false pride in place and blood,
The civic slander and the spite;
Ring in the love of truth and right,
Ring in the common love of good.

Ring out old shapes of foul disease;
Ring out the narrowing lust of gold;
Ring out the thousand wars of old,
Ring in the thousand years of peace.

Ring in the valiant man and free,
The larger heart, the kindlier hand;
Ring out the darkness of the land,
Ring in the Christ that is to be.

—TENNYSON.

*The title is supplied by the Editor.



The Editor's Easy Chair

RECEDING FRONTIERS

If one were to express in a sentence the greatest need of the present era, it might be phrased some such way as this: The greatest problem of the present day is how to procure such economic security as will enable men to live together in comfort and happiness, with means and leisure to get the most out of life. The phrase "most out of life" is to be interpreted by each according to his desires.

There are two ways of handling problems: one is the endeavor to solve them; the other is to run away from them. Problems of population have in the past been solved by the second method. The great mass movements of mankind have been due in the main to an effort to avoid difficulties incident to over-crowding. It is much easier to seek green pastures at a distance than to remain on the spot and improve agricultural conditions. This may be applied in a less literal sense. Before the invention of the mariner's compass humanity was to a greater or less extent stationary. The mariner's compass which made possible accurate sense of direction, made it also possible for more extensive navigation; it opened the way through hitherto uncharted seas.

* * *

During the fifteenth and sixteenth centuries problems arose in England over religion, causing a divison between the Puritans and the Established Church. The problem became acute. There were, however, two ways in which it might have been handled. The Puritans might have remained at home and, through time and persuasion, might have come to a satisfactory solution. The other course was to run away from the problem. They chose the latter method. Result, the founding of New England.

As the years passed, from small beginnings the population multiplied so that a new problem presented itself. Would it have been more expedient to remain on the Atlantic seaboard and eke out a livelihood

or to move the frontiers westward? As the population of the colony grew, expansion was along the line of least resistance, which meant towards the goal of the Pacific coast.

"I hear the tread of pioneers,
Of nations yet to be,
The first low wash of waves
Where yet will roll a human sea."

The final frontier was reached during the later decades of the nineteenth century, but the trek has gone on until the saturation point appears to have been reached. Not only does this great mass of humanity include the descendants of the small group in the Mayflower, it has been augmented by millions from every country in Europe who sought the solution of their home problems by way of escape. Of course, there is something very commendable in pioneering. The pioneer has the spirit of the adventurer. He risks hardships and privation and makes the solution of their problems easier for those who remain at home. Much has been said in his favor. He typifies the rugged individualist at his best.

The time, however, has arrived when civilization finds itself static again notwithstanding the improved means of communication by water, by land and by air. It is in the position of the person who is all dressed up and nowhere to go.

Running away from our problems, however, has not been peculiar to people of the United States; every nation in the world has adopted the same method of attack or rather of avoiding the conflict. Such has been the history of colonization.

* * *

So much for mankind in the mass. As individuals also we have adopted a similar method. The result has been the transformation of an agrarian population into one that is predominately urban. Back home on the farm were several sons in the family. The acres were not sufficiently broad to satisfy their ambitions. The problem was more intensive cultivation, or migration. One or two of the sons left home to seek his fortune in the professions, medicine or law; or it might be his acquisitiveness led him to embrace a business career. Probably the majority of men in the cities, who are past sixty years of age, can confirm this experience. They ran away from their problems, seeking greener fields in business and professional life. Time was when a large number of medical students came from the country. For a number of years, however, scarcely a farmer's son has been found among the classes in medical school. Medicine is recruited almost entirely from the city. The migration from the farm to the city has virtually ceased. The frontier outposts have been reached and also the saturation point of the professions as well as industry.

We have come at last to a stage in man's history when he must face his problems and find a solution. He can no longer run away. And this calls for all the cool reasoning and designing of which he is capable. Can man arise to Hamlet's estimate of him? "What a piece of work is man! How noble in reason! How infinite in faculty!"

Today he finds himself confronted with new frontiers. They are not concerned with geographic areas. "More and more of our people," according to Wallace, "are again emigrating to a new world. But this new world cannot be found on the maps. The pioneers to settle this new world do not cross the ocean. To enter it calls for an adventurous spirit."

Will we be equal to the venture? Time only will tell.

JUST TH' MAN O' IT

Ah canna get this auld, auld worl'
Tae run th' way ah want it.
It rains just when ah want it dry,
The sun is hot upon it.

Then God comes doon in thunder
Just when ah want it quiet,
Ah me, this miserable soul
Is gropin' in a riot.

An' fall comes on afore ah'm done
Aharvestin' th' corn;
Jean needs a coat, ah haena one,
An' son nae likes th' farm.

It's aye th' way wi' human man,
He's ne'er prepared tae go,
He's a'ways fumblin' wi' a plan,
'Twas ever thus an' so.

Ah weel—Guid Nicht.

WEELUM.

SPARE THEIR FEELINGS

"The feelings and emotions of the patients, under critical circumstances, require to be known and to be attended to, no less than the symptoms of their disease. Thus, extreme timidity, with respect to venesection, contraindicates its use, in certain cases and constitutions. Even the prejudices of the sick are not to be condemned or opposed with harshness. For though silenced by authority, they will operate secretly and forcibly on the mind, creating fear, anxiety and watchfulness."—Percival's "Medical Ethics," Year 1803.

A MOMENT OF MEDICAL HISTORY

W. T. D.

ANTISEPSIS

Decomposition processes affect the preservation of food, the disposal of sewage, the health of the living and the care of the dead. Thus, putrefaction is a problem of medical importance. While the problem is age old, precise knowledge concerning the nature of putrefaction and its control has accumulated only during the lives of men now living.

From the time of the ancient Greek physicians, the putrefaction of wounds was regarded as an unfavorable sign. According to the philosophy of the time, wounds were characterized by their moistness or dryness. Purulent wounds were found to be moist while dryness predominated in normal healing. In the avoidance of putrefaction or in the treatment of morbid wounds, certain desiccating agents were used. Desiccant and astringent medications were applied in an attempt to induce dryness and thus allow a wound to heal more normally. The principal agents employed to prevent putrefaction were powdered sea salt, ointments or powders consisting of salts of copper, ointments of tar and creosote, resins and various aromatic oils. Wine usually applied hot in the form of compresses or washes was commonly used for its antiseptic effect on wounds. The use of the cautery in opening abscesses and in operative procedure generally had a drying effect upon wounds and tended to prevent putrefaction. The aseptic method was approached in the cleansing of wounds with boiled water and in the use of clean linen and bandages.

In the conservation of bodies previous to burial, such desiccants as oil of thyme, cedar, aloes and myrrh were applied, and, among the Egyptians, more elaborate embalming methods involving the use of creosote, and tar and wood distillates were common. The use of perfumes among the ancients was widespread both for personal use and in religious rites, though, for thorough disinfection of rooms, the burning of sulphur was most effective.

Among the people of antiquity as well as of the Middle Ages, little was known concerning the nature of putrefaction beyond the disagreeable character of the smell associated with decomposition. The agents used in its control were empirical discoveries lacking a rational background. Philosophers and naturalists of the Renaissance speculated on the causes of putrefaction, but their conclusions amounted to little more than the recognition that dead bodies by nature putrefied while living ones did not. A significant discovery in the seventeenth century was the conserving property of alcohol, though this material was practically unused except in anatomical museums.

The first extensive, experimental study dealing with decomposition and the agents which deter the process was that of Pringle in 1750. Pringle compared various antiseptics in relation to their ability to prevent the putrefaction of beef. He expressed the relative antiseptic virtues of such agents as marine salt, borax, alum, aloes and camphor by numerical factors, and his values correspond fairly well with more recent evaluations of antiseptics. In the development of modern chemistry, some attention was directed to putrefaction. Certain decomposition products were identified and new disinfecting agents, such as chlorine and hydrogen chloride gas were discovered. Putrefaction came to be considered a complex chemical process in which certain labile constituents of the putrescible material acted as catalysts to hasten the breakdown of the remainder of the dead material.

The crowded living conditions associated with the Industrial Revolution and the increased urbanization of the population introduced an important hygienic problem. This was particularly apparent in the hospitals, which were centers of contamination. Obstetrical and surgical operations were invariably complicated by septicemia, pyemia and erysipelas. Antiseptic agents were used sporadically in the dressing of wounds, but there was no rational method of treatment.

Antiseptics had been used empirically in surgery by a number of physicians, though the practice had never become widespread. John Colbatch had treated wounds with antiseptic powder in the late seventeenth century and Bilguers, about 1764, had used balsam and essential oils in wound dressings. In 1795, J. C. A. Theden used a lotion of sorrel water and alcohol. Toward the middle nineteenth century, wounds were more

frequently treated with antiseptics and, in certain cases, it was noted that pyemia and hospital gangrene were reduced when antiseptics were used. Glycerine was used on wounds by Demarquay, who considered the substance a specific for pyemia. Alcohol and alcoholic solutions of various sorts were used about 1863 by Nealton and Chedevergne. Iodine and zinc chloride had been introduced by this time and coal tar had been used several decades earlier.

In 1859, Corne and Demeaux introduced a paste dressing for wounds, consisting of coal tar, olive oil and plaster. This received much comment in France and a commission of the French Academy studied the mixture. Another wound dressing consisting of coal tar and saponine was introduced by J. Lemaire. Lemaire's studies on antiseptics led him to an extensive work on carbolic acid published in 1863 and 1865. He suggested the use of carbolic acid for a number of medical conditions as well as for the treatments of wounds. In discussing the action of carbolic acid on wounds, Lemaire noted the studies of Pasteur and even advocated the germ theory of disease. Lemaire fell short of appreciating the value to surgery of a thoroughgoing antiseptic method. This remained for Lister, who, incidentally, was unaware of Lemaire's studies. Küchenmeister of Dresden had used carbolic acid as an antiseptic with good results in 1860.

The treatment of sewage by carbolic acid and other antiseptic agents had been in use by the middle of the nineteenth century, and, by this time, also, the practice of embalming by injecting antiseptic substances into the blood vessels had become common.

Joseph Lister began studying the nature of inflammation and attempted to analyze scientifically the nature of sepsis. He had decided by 1861 that the occurrence of suppuration in a wound was determined by decomposition processes arising in the wound. Four years later, after reading of the experiments of Pasteur, Lister initiated a method of treating surgical wounds by the scientific and systematic application of antiseptic agents and initiated also a new appreciation of the value of antisepsis.

Previous to Pasteur's study, the sense of smell was the sole test of putrefaction; afterwards, the growth and activity of bacteria determined the character of putrefactive changes. In 1860, following a four year study of various types of fermentation, Pasteur turned his attention toward putrefaction and the question of the possibility of spontaneous generation of life. Many years before, Spallanzani and Redi had disproved the assertion that animals could be born from inorganic material or from dead and putrefying animal or vegetable remains. The discovery of minute organisms by early microscopists, however, had revealed a new world of living matter. When the Darwinian theory of evolution appeared in 1859, microscopic organisms assumed a new importance. Was it possible that these forms were intermediate evolutionary stages between the inorganic material and the higher forms? The question of the spontaneous generation of these forms arose.

Pasteur in his studies experimented with such putrescible liquids as milk, urine and blood. When flasks containing these substances were sterilized by heat and sealed, no organisms appeared. Exposure to the air resulted in putrefactive changes and the presence of microörganisms unless the air were filtered by cotton wool. If a pledget of the cotton filter were introduced into the liquid, putrefaction ensued. Pasteur concluded that sterile putrescible substances would not decompose unless they were exposed to the dust of the air. He exposed flasks at various altitudes, in crowded places and in desolate ones, in the city and in the country, and found that air differed in the amount of mocroörganisms which would cause putrefaction. By 1863, Pasteur had not only demonstrated the error in the spontaneous generation theory, but had also indicated that the air was a source of contamination. He furthermore identified the organisms of putrefaction with several microörganisms which Ehrenberg had previously described. Pasteur pointed out that putrefactive organisms were anaërobic. By protecting the surface of small chunks of meat with wrappings of alcohol-soaked cloth, Pasteur demonstrated that sterile meat would not putrefy and, at the same time, confirmed the antiseptic properties of alcohol. Putrefaction of a dead animal body was considered to be associated with the invasion of organisms from the intestinal tract and from the surface of the body into the tissues.

In 1865, when Lister became acquainted with Pasteur's studies, he was impressed by

the fact that blood decomposed on exposure to air. He pointed out that blood likewise putrefied in wounds surrounded by living tissue and gave rise to odors of decomposition. He believed that decomposing matter in a wound had a pernicious effect upon healing tissue. If the air surrounding a wound, thought Lister, could be filtered of its dust particles and microörganisms, the wound could be protected from contamination. Lister noted this condition in pneumothorax due to the fracture of a rib, but with no external laceration. Air passed through the bronchial tubes to the pleural membrane, but dust particles were filtered out before the air entered the pleural cavity. No suppuration was evident. If microörganisms could be similarly excluded from open wounds, Lister believed that blood poisoning, erysipelas, pyemia, septicemia and hospital gangrene, which formed the surgeon's chief problem, could be avoided. Since it was impractical to filter organisms from the air, Lister attempted to prevent the establishment of organisms in a wound by the use of antiseptics. Becoming aware of the successful use of carbolic acid in the treatment of sewage at the town of Carlisle, he decided that this agent would be powerful enough for his purpose. Carbolic acid, because of its soothing effect upon the sensitive surfaces of wounds, had been employed occasionally in dilute solutions for surgical dressings previous to this time.

After two years of trial, Lister published in 1867 the results of his treatment of compound fractures by excluding putrefying agents with strong carbolic acid solutions. The treatment was so successful that hospital gangrene and pyemia were practically eliminated from Lister's hospital wards. He applied strong aqueous solutions of carbolic acid, oily solutions and pastes containing the antiseptic. Month by month, improvement in the application of the antiseptic agent was made. The technique was extended to the lancing of abcesses. Instruments were sterilized in carbolic acid, and every precaution was taken to prevent organisms from entering wounds. In surgical operations, a spray was introduced to eject a fine mist of antiseptic over the field of operation. Throughout, Lister emphasized that it was not the carbolic and other antiseptics which were responsible for his success, but the "wonderful powers of recovery possessed by injured parts when effectively protected against the pernicious influence of decomposition." Within a few years, French and German surgeons, as well as those in Great Britain, had adopted the technique, and the spray became common. By 1875, many hospitals had benefited by the decrease in deaths due to wound poisoning.

It was found, however, that carbolic acid poisoned the peritoneal cavity, benumbed the surgeon's hands and possessed an objectionable odor. Tait and Bannock among others, therefore, began to modify the technique of Lister. They boiled their instruments and observed certain precautions of general cleanliness in their operations with results which were as satisfactory as those during the period of the use of carbolic acid. In 1887, Lister himself abandoned the carbolic spray. At this time it was clear that the air was not as important a source of contamination as dirty operative technique. The newer technique of general cleanliness characterized by the sterilization of the operator's hands, instruments and the skin of the patient, but avoiding the use of antiseptics during an operation, became known as the aseptic method. In principle it was the same, though in practice it differed from the antiseptic method. The aseptic technique was particularly stressed by German surgeons, and von Bergmann standardized the method so that by the last decade of the nineteenth century, surgical operations were accompanied by a ritual which involved the heat sterilization of instruments, gauze and dressings, and the extensive use of soap and water, alcohol and corrosive sublimate for cleansing. The operators were masked and were dressed in sterile white robes. The American surgeon, William Halstead, was the first to use rubber gloves, in 1889, though these were not extensively used until a decade later. After 1897, cotton gloves were preferred by many surgeons for a short time.

By the time of standardization of the aseptic method, considerable information had accumulated on antiseptics. Rational disinfection was impossible before pure cultures of bacteria were made by Koch and Pasteur. The former made extensive studies (1882) upon the disinfecting action of steam and dry hot air at various temperatures as well as of a variety of chemical disinfectants. Disinfection was further studied by

von Behring (1894) and by other bacteriologists, and it was found that a given antiseptic did not act the same toward all bacteria. Some microörganisms showed a higher resistance than others. It was likewise found that *in vitro* tests on pure cultures did not represent the bactericidal value of germicides applied to living tissue. Sometimes, serum interfered with the action of antiseptics. Commonly, a strong germicide proved of little value in a wound, because it killed the tissue as readily as it did the infecting organisms.

Studies in the twentieth century clarified many ideas concerning the effectiveness of various agents as wound germicides and as general disinfectants. The discovery of the disinfecting value of coal tar dyes and of organic compounds containing mercury and silver salts resulted in the introduction of these substances.

As the newer knowledge of antisepsis at the end of the nineteenth century resulted in advanced surgical procedure and improved methods of disinfection and fumigation, clinicians became aware of the importance of antiseptics in preventing the spread of contagious disease. They learned of the possibility of the spread of disease through clothing, bedding and utensils, as well as through the contact of sick patients with attendants and even with physicians. Attention during the first fifteen years of the twentieth century was directed to establishing systems of cleanliness in contagious wards. Thermometers were sterilized before and after use. Aseptic precautions were taken regarding the physicians' hands and clothing. The clinician has attempted to discover internal antiseptics of use in the urinary and digestive tracts, but so far, with the possible exception of urotropin, the results of these attempts have proved of minor importance.

The history of antisepsis has shown progress from an empirical to a rational stage and from a period of faith in antiseptics to a stage of skepticism in which it was realized that a perfect antiseptic was a Utopian dream. Though antiseptics have proved indispensable in the control of infective and putrefactive processes, the appreciation of the possibility and importance of asepsis has been the lasting contribution of modern study.

A LAY TRIBUTE

The *Ohio State Medical Journal* in a recent number quoted the following editorial from the *Cleveland News* which will be appreciated by those in the active practice of medicine.

"A health journal devotes a page to discussing the question of why the doctor's bill is always the last to be paid.

"It shows a picture of a typical American family going over its accounts at the end of the month, calling its budget balanced because all of its bills 'except the doctor's' will fit in.

"The depression has served, as nothing else, to stress the prime injustice of making the doctor take it coming and going when times are hard and money is scarce.

"The doctor's services are needed just as much in bad times as in good, and are as cheerfully rendered.

"The doctor, in justice to humanity and the dictates of his high calling, cannot refuse to be of aid when needed. Yet in hard times he must suffer the loss of returns on his own investments, perhaps go through a bank failure or two, and assume other people's financial burden on top of his own by carrying the majority of his patients 'on the books.'

"The doctor can't take away the baby because the installments cease to be paid. He can't foreclose on our families, or shove us back into our previous state of bad health because we are unable, or refuse, to pay him. He can't put a cash and carry sign over his door.

"He wouldn't if he could. His philosophy is all against it.

"His life story is one of service, of making other people happy, no matter how down in the mouth he may feel himself. He must be a good actor when he approaches his patient, especially the very young patient who so often needs him. He must 'sell' health and recovery and the principles of right living.

"Yet at heart he is neither an actor nor a salesman.

"The world knows him for a kindly, sympathetic, unselfish human being, working day and night, who sees so much of suffering that he enjoys the thrill of the true craftsman in seeing his efforts yield results in health and happiness.

"Each of us would consider himself very shabbily used if the doctor would turn to our aid only after he had seen to everything else that had a claim on him. Yet all too often we let the doctor worry about his taxes, his rent, his car, his light and gas and telephone bills and the expenses of his office while we take care of those obligations which most urgently and disagreeably press us.

"Let's try paying the doctor first for a while—he can endure the shock.

"Let's budget our household expenses so as to provide in advance a modicum of income for health emergencies and make the doctor as happy as we are when he has done his part and helped put us on our feet, save our lives and our jobs.

"It isn't fair to penalize our best friend for our own failure to install the right kind of home bookkeeping, even thought we have become used to it."

"Liberalism (in the sense of freedom of enterprise) is the régime of easy times, and authoritarianism is the outcome of difficult times. It is an advantage to live in easy times, but whenever times are difficult there arises the necessity of the subordination of the individual to a concentration of authority. In many periods of history this has been so, and we accept the fact that the necessity for authority has arisen again."

PROFESSOR TOYNBEE.

DEPARTMENT OF SOCIETY ACTIVITY

Edited by The Secretary

WHAT OF THE NEW YEAR?

Comes now the New Year, and with it new and important problems which we, as a profession, must meet with wise decision, and with full courage. Chief among these problems is the pertinent one of Medical Economics.

Unquestionably there is a rising tide of insistence that the pattern of medical practice be changed so as to provide more adequately the modern requirements of good medical service to those in the lower income brackets. That this insistence has been promoted and fostered by foundations and social workers, and that the inadequacy of service has been definitely exaggerated, does not change the fact that inadequacy does exist and would be greatly increased if it were not for the free or part free service that the doctor has, as a part of his traditional obligation, gladly rendered.

But the burden in such times as these rests heavily on the profession, and the Michigan State Medical Society has seen the necessity of providing some way in which these patients may pay their own way in whole or in part. We welcome the President's Commission on Economic Security and the Advisory Medical Committee associated with it. We are complimented that on this committee is one of our own members, and that another member was invited to speak before the National Conference on Economic Security recently held in Washington. We hope that this committee, through its studies, may find a way alike satisfactory to doctor and patient. That way must permit the doctor to find that joy in the practice of medicine which comes with an independent life and an income sufficient to make it possible for him to give the best of himself and the best that medicine has to offer to his patients.

It seems likely that there is to be a delay while the profession is given the opportunity to find a way to change the pattern of medical practice to fit the changed conditions of our time. It would seem that Michigan, with its special preparation for the task, might well take the lead among state organizations and either proceed with the Mutual Health Service plan or develop some other plan which, while maintaining the principles laid down by our House of Delegates, shall accomplish the essential service of providing thoroughly good and more evenly distributed medical care. It is fortunate that Michigan had its vision and that we have the report of the Committee on Survey of Medical Services and Health Agencies, upon which to base such a plan.

CANCER IN MICHIGAN

In keeping with other parts of the country, the cancer problem is assuming increasing importance in Michigan. While the death rate from malignant disease is lower in this state than in adjoining states, the rate of increase calls for serious consideration of measures for its control and prevention.

The cancer problem has never been studied in Michigan on a statewide basis as have other problems touching on medical practice. The extent and distribution of facilities for diagnosis and treatment were studied by the Cancer Committee of the State Medical Society several years ago* but circumstances prevented the follow-up necessary to develop an adequate organization of this information for the better care of cancer patients.

Cancer, the second cause of death throughout the United States, is still shrouded in mystery and looked upon with pessimism by the majority of laymen, and by too many physicians. This pessimism in the laity can be charged to ignorance of the cause and the hopelessness of a cure. The pessimistic physician evidently has not been impressed by advances made in recent years in the prevention and cure of cancer. Too often he is still thinking of the incurable

*Supplementary Report of Cancer Committee. C. E. Dutchess, Chairman. Journal Michigan State Medical Society, page 98, February, 1932.

cases that have come to his attention. With more than 24,000 cured cases of cancer reported by the American College of Surgeons, no one can still say that cancer is an incurable disease.

During the coming year the cancer problem in Michigan will be surveyed by the American Society for the Control of Cancer, the work being carried out on invitation of and under sponsorship of the State Medical Society. This will be a *fact finding* survey and will extend to all hospitals of 25 beds or more. Dr. F. L. Rector, Field Representative of the American Society for the Control of Cancer, will conduct the field work and prepare the report.

Hospitals and members of the State Medical Society are urged to coöperate fully with requests for data and other information that will be made as the work progresses. They can rest assured that no heavy task will be required to furnish the desired data. They should appreciate that the report will have value only in proportion to the coöperation received while the field work is being carried out.

Through coöperation of the State Department of Health a more comprehensive survey than has been possible elsewhere will be carried out. The results should add materially to information about cancer incidence and mortality, and facilities for its diagnosis, treatment and control. All other agencies that can throw light on the subject will be consulted.

A report of the survey with recommendations will be made to the State Medical Society. It is hoped that out of this effort will come an added appreciation of the cancer problem and a better organization of Michigan's facilities for the prevention and control of this disease.

BUYING HEALTH

The December number of the *Survey Graphic* is given up to a symposium under the above title, where are presented the views of various individuals and organizations on this pertinent subject. To give up the entire issue to this discussion is impressive evidence of the mounting interest among both the laity and the profession in Medical Economics, and emphasizes the conflicting views that prevail.

A pre-publication announcement says, "President Roosevelt's message in June made security of health an issue of national policy. *Survey Graphic* discloses how by fall it had become an issue in politics." Some features of the report to be brought out by the President's Committee on Economic Security are forecast by Secretary Perkins.

"Michigan Makes Ready," is the title of an excellent article by former Secretary Warnshuis, which appears in this issue. Other contributions of interest are: "Medicine's Right to Control" by William Trufant Foster; "The Public's Impatience" by Lee M. Merriman, a newspaper man; "The Old Family Doctor—And The New" by Dr. N. B. Van Etten; "We Believe in Group Medicine" by Dr. Rexwald Brown; "The Challenge of Socialized Medicine" by Dr. Joseph Slavit; "Can Health Be Bought?" by C. E. A. Winslow. In addition are noteworthy articles by Dr. R. G. Leland, Dr. Michael M. Davis, Edward A. Filene, Dr. N. W. Faxon, and others.

If this issue of change in the pattern of medical practice is to be intelligently faced more emphasis must be placed on the education of the doctor in this medical-social field. The study cannot be left to a few leaders and the members of Economic Committees. This article is written to urge a studious interest by every member of the profession. The current issue of the *Survey Graphic* is a good place to begin.

BAY COUNTY MEDICAL SOCIETY comes to the post second with practically 100 per cent paid membership dues for 1935. Congratulations!

MINUTES OF THE MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL OF THE MICHIGAN STATE MEDICAL SOCIETY

A meeting of the Executive Committee of the Council of the Michigan State Medical Society was held in Grand Rapids on Wednesday, December 12, 1934, with the following present:

T. F. Heavenrich, Vice Chairman
Henry R. Carstens
C. E. Boys
J. Earl McIntyre
Henry A. Luce
Councilor, Thomas P. Treynor
Councilor, Henry E. Perry
President, Richard R. Smith
Secretary, Burton R. Corbus

The Secretary presented a communication from the American Society for the Control of Cancer,

announcing its intention of beginning a cancer survey in Michigan in January. A communication in regard to a newly organized Allied Health Group. Certain communications from Wayne County referring to the New York Dispensary Law, the Administration of the Afflicted Child Law and in regard to S.E.R.A. fees for medical care. Also communications from the Field Director of the American Society for the Control of Cancer and from the Cancer Committee of the State Society asking that they be allocated funds. These communications were discussed and the Secretary instructed to present them to the Council at its January meeting.

Doctor Luce requested a discussion in regard to the activities which should be undertaken by the Economics Committee and the policies which should govern the committee during this coming year. As Speaker of the House he presented for consideration a tentative list of appointments for this committee and explained that these appointments had been delayed in the expectation that out of the Conference on Social Security or from Washington might come information which might influence him in choosing the personnel.

Doctor McIntyre presented for discussion the proposed Old's Makers Health Service Plan.

Doctor Smith reported for the committee appointed to receive applications and interview prospective applicants for Secretary of the State Society.

Doctor Smith presented a communication from Doctor Gariepy, which was referred to the committee on County Societies with instructions to report at the January meeting.

The secretary presented a financial statement and discussed the question of dues for the coming year. On motion of Doctor Boys, the Secretary was instructed to subscribe to a Clipping Bureau for current material on Medical Economics and Sociology.

On motion of Doctor Carstens, the Secretary was instructed to exceed the budget for Secretary's salary to allow for the overlapping of two weeks.

The question of the place for the Annual Meeting of the State Society was discussed and was referred to the January meeting of the Council, with the request that information in regard to the availability of certain locations be prepared for this meeting.

On motion of Doctor Luce, seconded by Doctor Boys, the Secretary was instructed to call the January meeting of the Council for the 16th and 17th of that month in Detroit.

The Legislative Committee having asked for instructions, its problems and proposed procedures were discussed at length, ending in the following motion by Doctor Luce, seconded by Doctor Boys and passed by the Committee:

Since in this discussion of legislation certain procedures are presented which, in the opinion of this Committee, involve marked changes in present policies and recognizing that in regard to change of policy there is among the profession a wide variance of opinion, it is directed that the matter be referred to the January meeting of the Council.

On motion, the Executive Committee voted to appropriate $250 to the Chairman of the Legislative Committee for expenses in Lansing between now and the 20th of January.

The meeting adjourned at twelve midnight.

(Signed) BURTON R. CORBUS,
Acting Secretary.

In Memoriam

"And a man shall be as an hiding place from the wind and a covert from the tempest, as rivers of water in a dry place, as the shadow of a great rock in a weary land."

This text from Isaiah has a singular appropriateness when applied to those listed below—our losses during the past year—for *this* they have been to the thousands of people to whom they devoted their professional lives.

Bay County
George E. Andrews
Ernest F. Crummer
A. W. Herrick
H. Payne Lawrence
J. M. McLean
Stanley E. Somers

Berrien County
Henry G. Bartlett
Charles N. Sowers

Calhoun County
Robert M. Gubbins
Rolland A. Welch

Clinton County
W. A. Scott

Delta County
G. A. Eychaner

Genesee County
R. D. Brown
Don D. Knapp

Gogebic County
A. W. Lindbohm

G. I. C. Counties
E. M. Highfield
Rayburn B. Smith

Houghton County
John W. Moore
Vernon L. Oler

Ingham County
Robert A. Alton

Jackson County
C. Brogan
E. C. Taylor

Kalamazoo County
John W. Bosman
Neil L. Goodrich
J. E. Maxwell
Donald P. Osborne
Marian Parker
Frank C. Penoyer
LaVern I. Rogers

Kent County
Peter J. DePree
P. T. Grant
Henry L. Miller
Simon L. Rozema

Livingston County
J. E. Browne

Macomb County
G. A. Persson

Monroe County
E. S. Cornwell
George B. McCallum

Muskegon County
John Vander Laan

Oakland County
Robert Y. Ferguson
George Simenton

Saginaw County
R. Mercer Carter
H. W. Kauffold
Matthew Kollig
Ferdinand E. Parkinson

St. Clair County
Roy A. Windham

St. Joseph County
L. D. Becker

Tuscola County
H. H. Merriman

Washtenaw County
Robert G. MacKenzie

Wayne County
Walter O. Allen
Max Ballin
Edgar V. Beardslee
G. Russell Beck
John E. Clark
Victor C. Doherty
Leland S. Evans
J. N. Garber
H. Wellington Green
J. Albert Kimzey
S. A. Kulick
Byron Loney
Ignatz Mayer
George E. McKean
F. Lyston Newman
George O. Pratt
Horace W. Sheldon
R. J. Sisson
John M. Thomas
Harold Wilson
Francis X. Zinger

Wexford County
William T. Dodge

COUNTY SOCIETIES

BARRY COUNTY

About sixty physicians from Allegan, Eaton, and Barry Counties attended the regular meeting of the Barry County Medical Society at Hastings, Wednesday, December 5, 1934. The program was arranged by the Barry County Medical Society and the W. K. Kellogg Foundation.

The speaker was Dr. Bert Beverly of Chicago. Doctor Beverly is a psychiatrist to Children's Memorial Hospital, Chicago, and he is Associate Professor of Psychiatry in the Rush School of Medicine. His subject was, "The Relationship Between the Physical and Mental Development of the Child." His talk was very interesting and enjoyed by everyone.

H. A. ADROUNIE, M.D., *Secretary.*

KENT COUNTY

The thirty-second annual dinner meeting of the Kent County Medical Society and the election of its officers held Wednesday evening, December 12, 1934, at the Rowe Hotel, Grand Rapids, with an attendance of one hundred and thirty members, terminated the activities of our Society for the year 1934.

The year ends with a total membership of two hundred and forty-six, and of this number, three, namely, Drs. Albertus Nyland, R. H. Spencer and L. A. Roller, are honor members of both the Michigan State Medical Society and our local Society, while four—Drs. Henry Hulst, Collins H. Johnston, James DeKraker and A. B. Thompson, Sr.—are honor members of our local organization alone.

Through death, the Society, during the past year, lost three members, Drs. Peter T. Grant, P. J. DePree and Henry L. Miller, and through transfers six members were lost to our roster. Six new members were added to our rolls.

Fifteen business and scientific meetings were held during the past year with an average attendance of sixty-eight per meeting.

Since the last annual meeting eighteen editions of the *Bulletin* have been published. During the past year no change has been instituted in the conduct of the publication of the *Bulletin,* it being edited by the secretary and the same arrangements for its printing and mailing have been continued. The Society suffers no expense in the publication of this *Bulletin,* the cost being covered by the revenue derived from advertisements.

At the annual meeting, preceding the regular order of business, a communication was dispatched to the executive committee of the council of the Michigan State Medical Society in session relative to important legislative matters.

After the annual reports and the address of the retiring president, the following officers were elected:

President-elect—Dr. John W. Rigterink
Vice President—Dr. Leon DeVel
Secretary-Treasurer—Dr. J. M. Whalen
Delegates to State Society—The present incumbents

Following the election, Dr. Carl F. Snapp, the retiring president, installed Dr. J. B. Whinery, the president for 1935, who concluded his initial address with an introduction of Dr. J. W. Rigterink, the president-elect.

J. M. WHALEN, *Secretary.*

ST. CLAIR COUNTY

A regular meeting of Saint Clair County Medical Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, November 20, 1934.

Dinner was served to over twenty members and our guest of the evening, Dr. Robert C. Jamieson of Detroit.

After a short business session the members of the Society had the pleasure of a very practical and interesting discourse by Dr. Jamieson. Two cases of acne vulgaris and one case of dermatitis venenata were presented by Drs. Wellman and Callery and Dr. Jamieson discussed the etiology, pathology, diagnosis, prognosis and treatment of both acne vulgaris and dermatitis venenata.

The remainder of the program was a series of lantern slides elucidated by continuous remarks from the speaker upon each condition. Slides showing typical cases of eczema, dermatitis, impetigo neonatorum, impetigo contagiosa, acne, pemphigus, psoriasis, nevi of the newborn, ringworm, dermatitis seborrheica, pompholyx, thrush, yeast fungus infection among Hebrew women, epitheliomata of face, head, lips and hands as well as many other dermatological conditions were presented.

Discussion was carried on by Drs. Wellman, Heavenrich, Callery and others. In conclusion Dr. Jamieson replied to many queries made by those present and thanked the Society for having had such a delightful evening. Before adjournment Dr. Armsbury, president of the Society, thanked the speaker for appearing before the meeting and giving such a fine address.

The last regular meeting of the year was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, December 4, 1934. Supper was served to twenty-five members and a guest at 6 p. m. The meeting was called to order by President A. B. Armsbury at 7:30 p. m., with twenty-seven members in attendance.

Dr. Armsbury introduced Dr. Edgar Kahn, associated with Dr. Peet, University Hospital, Ann Arbor, who addressed the Society upon the subject of "Injuries and Tumors of the Brain and Cord."

The address was both timely and practical inasmuch as the widespread number of automobile casualties of today are very likely to result in lesions of the brain and cord. Several salient points made by Dr. Kahn were that the tendency today is to avoid large flap operations and to substitute therefor two small openings to relieve pressure from subdural hemorrhage; that great caution must be exercised in cases of compound fracture of the skull into the auditory apparatus not to syringe the ear and to consider all cases of hemorrhage from the auditory canal to be such unless otherwise proven; that shock must be treated first before any other treatment is attempted; that there is no great hurry about taking x-rays immediately after the admission of a patient with head or back injury; that morphin must not be administered to cases of head injury; that the use of hypertonic glucose solution in securing absorption of edema of brain tissue is justified and proper; that spinal puncture to relieve intracranial pressure in injuries is often life saving; that in cases of brain tumor in children the signs of same are usually vomiting and headache over a long period and surgery must be instituted early or blindness will result; that care must be taken in obtaining proper lateral rather than anteroposterior films of vertebral injury and that a good lateral of the seventh cervical may be obtained by traction below the shoulders and above the seventh

cervical, the films being placed above the shoulder in the curve of the neck; that the paralysis of fracture and cord injury increases in extent according to the level of the injury upward from the seventh to the third cervical vertebræ, from hand signs in the seventh to almost complete upper extremity involvement in the third; that the first lumbar is the most frequent site of lower spinal injury, in which case the symptoms are saddle anesthesia, incontinence, etc., and that the usual signs of tumor of the cord are severe pain lasting for months together with gradual weakness of the extremities progressing into a true paralysis.

The discussion was opened by Doctor Webster of Marlette, followed by Doctors Sites, Patterson, McKenzie, Fraser, DeGurse, Cooper, Burke and Armsbury, after which Doctor Kahn closed the discussion in the usual manner. Before adjournment the Society gave Doctor Kahn a rising vote of thanks for his splendid talk.

GEORGE M. KESL, *Secretary.*

TUSCOLA COUNTY

The regular annual meeting of Tuscola County Medical Society was held at Caro Community Hospital, Caro, Mich., November 8, 1934.

The meeting was called to order by Dr. Johnson at 8:30 p. m. Minutes of the previous meeting were read and approved without discussion.

Communications from the State Society were read.

Report of Secretary. Motion was made by Dr. Salot and seconded by Dr. Hoffman that the report be accepted as read. Carried.

Report of Board of Censors. Drs. Race and Malloy presented the application of Dr. Gugino of Reese for membership. Elected.

The address of the retiring president was then given by Dr. O. G. Johnson of Mayville.

Election of officers for 1935 resulted as follows: President, Dr. Annie Stevens Rundell, Vassar; vice president, Dr. George Bates, Kingston; secretary, Dr. Lloyd L. Savage, Caro; delegate, Dr. O. G. Johnson, Mayville; alternate, Dr. A. S. Rundell, Vassar.

Report of Economics Committee was given by Chairman Dr. Hoffman. The recommendation of the committee was presented as a motion seconded by Dr. McKenzie, that the Medical Society accept the contract with the Board of Supervisors for medical care of the adult indigent. Carried. This is the third year of this contract.

Motion was made by Dr. MacRae and seconded by Dr. Salot that a committee of three be appointed to investigate the project for local hospitalization of juveniles under the Crippled Children's Act. Carried.

Motion was made by Dr. MacRae that all cases sent to Ann Arbor Hospital be reported to the Secretary for discussion at regular meetings. Seconded by Dr. Salot. Carried.

LLOYD L. SAVAGE, *Secretary.*

MID-WINTER MEETING OF THE COUNCIL

The Council will convene on January 17, 1935, at 10:00 A. M., in the Statler Hotel in Detroit for its regular mid-winter session and for the transaction of such business as may properly come before the Council.

JULIUS POWER, *Chairman*
B. R. CORBUS, *Acting Secretary*

WOMAN'S AUXILIARY

MRS. F. T. ANDREWS, President, Kalamazoo.
MRS. F. M. DOYLE, Secretary, Kalamazoo.

NEW YEAR GREETING TO AUXILIARIES!

Hard on the heels of the Christmastide comes the New Year, anticipated by all, with confidence and hope.

We are beginning a New Year in our work for our Auxiliaries, a year in which I am hoping that we may grow by leaps and bounds and become more useful to our Medical Societies; that the cry will go out from all counties of the State not having an Auxiliary, urging us to help them organize one; that new contacts can be made, new Auxiliaries formed, new friendships developed and old ones cemented—nothing can take from us our privilege of service to our Medical Society.

May the New Year have in store for us a realization of our dreams, that every County Medical Society in the state will endorse and organize a Woman's Auxiliary.

There is nothing finer in life than the real friendships we make. Let us think not only of new friendships, but of what we are trying to accomplish in service and help to our Medical Societies, as auxiliaries.

I ask that all doctors' wives may join in our drive to increase our membership a hundred fold.

So, with my best wishes for a Happy, Prosperous and Fruitful New Year for all doctors' wives and their families—God bless them.

MRS. GUY LINCOLN KIEFER,
Chairman of State Organization.

Adrian has requested an organization to be formed early in January.

Will others follow for February?

Dear Wives of Doctors:

As each chairman of standing committees is willing to carry on for another year, I think we as individuals should show our appreciation by hearty coöperation.

May we make the Auxiliary Department in the Journal the medium through which you can receive both National and State information.

We must first be organized one hundred per cent to live up to the expectation of the doctors who have confidence in us. This possibility is not so far away, as new groups are asking for information.

Medical Science has made great strides in a very short period of time. If it is something to boast about, it is certainly worthy of our efforts to coöperate, that these advances may be put into practice.

If we can only get the doctors' wives to read this department every month, the committee heads will prepare much valuable information for you.

Let us also invite any of you to send in an article of your own and we'll leave the subject to you.

Sincerely,

(MRS. F. T.) CHARLOTTE ANDREWS,
President, Woman's Auxiliary.

Standing Committee Chairmen for 1935

Mrs. P. R. Urmston, Program, 1862 McKinley Ave., Bay City, Mich.

Mrs. H. M. Heitsch, Public Relations, 111 Oneida Road, Pontiac, Mich.

Mrs. W. H. Haughey, Hygeia, 40 Poplar St., Battle Creek, Mich.

Mrs. L. C. Harvie, Press and Publicity, 341 Brockway Place, Saginaw, Mich.

Mrs. Guy L. Kiefer, Organization, 148 West Grand River Ave., East Lansing, Mich.

Mrs. E. S. Peterson, Legislation, 506 S. Jackson St., Jackson, Mich.

Mrs. J. H. Dempster, Revision, 5761 Stanton Ave., Detroit, Mich.

To the Woman's Auxiliary Members:

Our new legislative year is drawing near and from the talks and suggestions given at the State Auxiliary meeting held in Battle Creek by the A. M. A. and State Medical Society presidents as well as the State Advisory Committee and others, the consensus of opinion pointed to the study of legislative matters as our chief objective for this year.

I am asking that each County Auxiliary appoint a legislative chairman to keep in touch with all legislation pertaining to and of interest to the medical profession. (This information may be secured through your Medical Legislative Chairman or by contacting your district Representative or Senator.) That each Auxiliary devote at least fifteen minutes time at each meeting to the discussion of the more important bills that your chairman has prepared for you. That you will be prepared to discuss medical legislation intelligently before outside organizations, if called upon by your County Medical Society. Much harm has been done in the past by those same organizations voting for or against bills that they did not in the least understand.

Another suggestion coming from headquarters is that the Auxiliary try to have a representative as a member of other organizations to familiarize themselves with the activities of other groups and in this way we can be of assistance to our husbands in helping the public.

If you have not read Dr. Robb's article in the State Medical Journal of November, 1934, please do so and re-read it if you have already seen it. It will give you a much better outline of what our duties are than I could possibly do.

Your State President, Mrs. Andrews, and the other state officers are particularly alert to the probable legislation which will be introduced in the next Legislature and are desirous that each member acquaint herself with the above suggestions and render herself and her Society such service as is possible.

Please read your Journals.

MRS. E. S. PETERSON,
Chairman of Legislation.

Please send all news articles, accounts of County Auxiliary meetings and clippings (for State Scrap Book) to Mrs. L. C. Harvie, Press Chairman, before the first of each month. This must be done if items are expected to be published in the following issue of the JOURNAL.

Bay County.—The Bay County fall activities started on November 14, with a 6:30 dinner held at the Duchess Tea Room, Bay City, twenty-four members attending. A short business session followed with Mrs. L. F. Foster, vice president, presiding. Mrs. Foster, who attended the State Convention as a delegate, gave an interesting report of the Battle Creek meetings.

Saginaw County.—Opening the year's program on subjects of interest to physicians' wives who wish to increase their understanding of community social and health agencies was a talk given by Dr. Frank A. Poole, city health officer, Monday evening, November 19, 1934. Dr. Poole spoke of attempts to bring about hygienic living in the community.

Dr. Poole opened his talk to fifty members of the Auxiliary with an outline of the commission plan of government. "The activities of the department of health are grouped under eight major headings," Dr. Poole declared. "They are general administration, which includes the division of Administration and division of Health Education; communicable disease control, child hygiene, public health nursing, food control, general sanitation and laboratory service."

A second speaker for the evening was Miss Louise Liskow, who explained the work of the

Junior League in its major project, the Community Center, in Saginaw's First Ward, and outlined other activities of the organization that were founded to promote an interest in social, economic, cultural, educational and civic conditions in the community and to give efficient and reliable volunteer service.

The program and business meeting took place after a dinner served at the home of Mrs. Robert Jaenichen, 906 Howard Street. Decorations in the home were in keeping with the holiday season, featuring red candles and attractive arrangements of vegetables.

During a social hour at the close of the program, bridge and anagrams were enjoyed with prizes for holders of high scores. Assisting the hostess were Mrs. W. H. Pickett and Mrs. Emil Richter.

Jackson County.—The regular meeting of the Women's Auxiliary to the Jackson County Medical Society was held on Tuesday evening, November 20, 1934, in the Jackson High School.

Miss Ester Iddles, head of the Home Economics department, had charge of the dinner served at 6:30 to thirty members of the Auxiliary. Following the dinner the members were entertained in the library.

Mrs. Glen Hicks and Mrs. L. J. Harris were in charge of the program. Various phases of high school life were brought to the members in a very interesting manner.

A double trio directed by Miss Edith Stone sang two numbers. Miss Edith King, librarian, gave an interesting talk concerning the library and its contents; later, her assistants conducted the auxiliary through the library. Another phase of high school life was presented by Miss Ruth Coolidge, dean of girls.

She said that the tendency of the human tongue is to exaggerate, and that out of the 1,800 students in high school, 1,600 are normally happy students. She emphasized the three Cs for schools rather than the three Rs. These are Character, Culture and Citizenship. In character, Miss Coolidge pointed out, the student must be fair-minded anl loyal to his family, friends and school; in culture, he must find thoughtfulness, poise and social relationship; in citizenship, he must be able to submerge individual interest in the group.

She said that the aim of education is, that children should be able to fit happily into life. To do this more completely the school should be chosen to fit the child.

PAULINE M. VANSCHOICK, *Secretary.*

COMMUNICATIONS

ALLERGY IN EUROPEAN CENTERS

Editor of the Journal of the Michigan State Medical Society:

While I have seen a great deal of European medicine within recent weeks, the medical news which I can give you may not be of great interest. In Paris I spent a great deal of time with Drs. Richet and Pasteur Vallery Radot. The latter, a grandson of Pasteur, is one of the best known clinicians in Europe and is greatly interested in allergy. In his laboratory a well trained staff is carrying out a great deal of animal experimentation on anaphylaxis, supported by the Pasteur Institute.

There is considerably less asthma in Europe than in the United States, which is undoubtedly due to the absence of ragweed and possibly to the more frequent use of prophylactic serum. It is interesting to note how much better the patients respond to such simple measures as non specific therapy, particularly x-ray treatment and peptone injections than in the countries where ragweed exists. The real hay, particularly orchard grass, is the most important hay fever excitant in Europe. The counts, however, do not run as high as they do in the United States. The fungus problem has been given a great deal of thought, particularly in northern Germany and the damp locations in Holland, with, however, very little practical outcome. Vasomotor rhinitis is much rarer in Germany and Switzerland, where much less face powder and other cosmetics are used than in France.

Dermatologists are thoroughly "allergy minded" in Europe, possibly more than they should be. Several times I have seen "allergic" skin lesions which would probably not be classified as such in the United States. There seems to be an abundance of contact dermatites from furs, probably due to certain dyes. A new kind of contact lesion on the head and forehead is occasionally seen because they use blonde hair dyes in their great desire to become nordics. Eczema is still largely treated according to its morphological appearance, with less of a tendency toward an etiological approach than in the United States; at the same time our progress in the field of allergic skin diseases is highly recognized.

Since skin testing and desensitization are very seldom utilized on the continent, one has the feeling that there is something lacking in European allergy. On the whole, however, my visits at the various European centers of allergy have given me a different point of view from that which I gained through my recent visits with Boston, New York and Chicago colleagues.

GEORGE L. WALDBOTT.

Paris, November 25, 1934.

A REQUEST OF THE DOCTOR IN BEHALF OF HIS WIFE

Editor of the Journal of the Michigan State Medical Society:

If the officers of the Auxiliary can make the wives of doctors JOURNAL conscious, so that they will really read it each month, we can send out much more intelligently the information we receive from national sources. We could not only familiarize our members but those wives, who for many reasons, can not belong.

Is it asking too much that a little slip be either stuck to the front page or just put in the front to beg the doctors to take the magazine home? I think if we could get them started to reading that page we can give them much that never reaches them in any other way.

MRS. F. T. ANDREWS,
President, Woman's Auxiliary,
Michigan State Medical Society.

Kalamazoo.

RADIO MEDICAL BROADCAST

To the Editor:

The Radio Committee report was accepted by the Council of the Michigan State Medical Society with the recommendation that the work be continued and that further efforts be made to have other County Societies do broadcasting. We have several groups that are doing a good job. However, we feel that in those towns which have radio stations it should be the duty of the County Societies to try to get time in their local station for health talks. The A. M. A. is broadcasting in both of the national

hookups and has approved of the radio as an educational force.

As Chairman of the Radio Committee I am anxious to carry out our President's suggestion. Will the County Secretaries who read this notice take the opportunity of doing some missionary work along this line? The Radio Committee will be ready to supply talks and do anything in its power to aid in the work.

WILLIAM J. STAPLETON.

Detroit, Michigan.
December 13, 1934.

PLEASED WITH DECEMBER JOURNAL

To the Editor:

I want to congratulate you on the latest issue of the JOURNAL of the Michigan State Medical Society. The amount of scientific material contained in this issue is amazing. The high standard of the articles and the number of the same cannot be surpassed by any publication of this size. With kind regards and with appreciation of your efforts.

EMIL AMBERG.

Detroit, December 10, 1934.

OBITUARY

Dr. G. Carl Huber

Dr. G. Carl Huber, dean of the University of Michigan graduate school since 1927 and head of the Department of Anatomy, died on December the twenty-sixth at the University Hospital. Dr. Huber was born in Hoobly, India, on August 30, 1865. He was the son of the Rev. John and Mrs. John Huber, who were missionaries in India at the time. Dr. Huber's early education was obtained at Attica, New York. He attended the University of Michigan and was graduated in medicine in 1887, but remained at the University after his graduation as an assistant in Anatomy. Dr. Huber pursued graduate work at the University of Berlin in 1891-1892 and the University of Prague in 1895. He became head of the Department of Anatomy at the University in 1914 and on the death of the late Dr. Alfred H. Lloyd, Dr. Huber was chosen as his successor as dean of the graduate school. He was a member of almost every learned society to which scholarship makes its members eligible. Dr. Huber was married in 1893 to Lucy A. Parker of Ann Arbor, who survives him. He is also survived by three children, Mrs. L. H. Andrus of New York, and Drs. Carl Parker Huber and John Franklin Huber, both connected with the faculty of the University.

"Scholarly and pious persons, worthy of all respect, favor us with allocutions upon the sadness of the antagonism of science to their medieval way of thinking, which betray an ignorance of the first principles of scientific investigation, and an incapacity for understanding what a man of science means by veracity, and an unconsciousness of the weight of established scientific truths, which is almost comical."

—THOMAS HENRY HUXLEY.

GENERAL NEWS AND ANNOUNCEMENTS

ROENTGENOLOGISTS AND PATHOLOGISTS MEET

A joint meeting of the Michigan Association of Roentgenologists, Detroit Branch of the American Urological Association, Detroit Roentgen-Ray and Radium Society, and Michigan Society of Pathologists will be held Thursday, January 17, 1935, at 8:00 o'clock P. M. in Harper Hospital, Detroit, Michigan. The program is as follows:

Symposium on Tumors of the Urinary Tract

"Diagnosis of Tumors of the Urinary Tract"—Dr. B. H. Nichols, Cleveland, Ohio.

"Treatment of Tumors of the Urinary Tract, More Especially of Renal Tumors."—Dr. C. A. Waters, Baltimore, Maryland.

Pathologic Discussion—Dr. Frank W. Hartman, Detroit.

Diagnostic Discussion—Dr. Hans Jarre, Detroit.

Surgical Discussion—Dr. H. W. Plaggemeyer, Detroit.

On Friday morning, January 18, at 9:00 A. M. a Symposium on Malignancy will be presented at Harper Hospital. This will be conducted as the usual Friday Morning Conference of the Staff of Harper Hospital in conjunction with the Wayne County Medical Society, American Society for the Control of Cancer and Michigan Pathological Society.

Symposium on Malignancy

"Responsibilities and Opportunities of the Board of Health in Malignancy."—Dr. Henry F. Vaughan, Health Commissioner.

"Responsibilities and Opportunities of Medical Organizations in Malignancy."—Dr. O. A. Brines, Detroit.

"The Function of the National Society for the Control of Cancer."—Dr. Wellington Yates, Detroit, and Dr. F. L. Rector, New York.

"Pathologic Aspects of Malignancy."—Dr. P. F. Morse, Harper Hospital.

"Surgical Aspects of Malignancy"—Dr. George T. Pack, New York.

"Roentgenologic Aspects of Malignancy"—Dr. G. E. Pfahler, Philadelphia.

Demonstration of Cases with discussions—Dr. Pack and Dr. Pfahler.

For those interested, a technical demonstration will be given in the X-ray Department in the afternoon.

The program includes a Roentgen exhibit of Malignancy, with special reference to results of radiation treatment.

A NEW WAX AMPULE FOR SILVER NITRATE SOLUTION USED IN PREVENTION OF OPHTHALMIA NEONATORUM

The Michigan Department of Health is beginning the distribution of a new ampule, developed in the Department during the last two years. The advantage of the new ampule is that in it the silver nitrate solution does not become acid and precipitate out. In the old type ampule the silver nitrate solution rapidly deteriorated, becoming very acid (pH 2.2) and leaving a deposit of black precipitate on the walls of the ampule.

Extensive search failed to reveal a satisfactory substitute for the ingredients in the old ampule. Study of the old ampule showed the beeswax to be

responsible for the deterioration of the silver nitrate. Attempts to modify the beeswax so as to prevent the deterioration were unsuccessful. Since silver nitrate was found to be very stable in contact with paraffin, a procedure for lining the ampules with paraffin was evolved and found to give a satisfactory and stable ampule. In the old ampule, silver nitrate solution became acid within a few days at room temperature; in the new ampule the solution retains the characteristics of a fresh preparation indefinitely.

The new ampule is shaped like a bullet. When used it should be punctured at the "nose" and squeezed in the middle to eject the silver nitrate. The new ampule may be used when cold but it will be easier to squeeze if warmed to room or body temperature before use.

THE HIGHLAND PARK PHYSICIANS' CLUB

The program of the ninth annual clinic of the Highland Park Physicians' Club as published in the December number of this JOURNAL was carried out according to schedule. There was a total attendance of approximately four hundred doctors. The interest in the Clinic is manifested by the fact that the number of doctors remained throughout all sessions, showing the keen interest of the profession in what amounts to a day of intensive post-graduate instruction. This annual feature of the Highland Park Physicians' Club is distinguished by the fact that, since inauguration nine years ago, no clinician scheduled to speak has disappointed the committee. Over three hundred of the guests partook of the hospitality of the Highland Park General Hospital at luncheon. The day's clinic was concluded by a Subscription Dinner held at the Wayne County Medical Society club rooms. Dr. H. E. Northrup, president, acted as toastmaster when short addresses were delivered by Dr. W. J. Cassidy, president of the Wayne County Medical Society, Dr. J. H. Dempster, Dr. Edward J. Stieglitz of Chicago and Dr. Henry A. Luce.

Dr. John Carmack of Indiana, Professor of Otolaryngology, who addressed the Highland Park Physicians' Club Clinic on December the fifth, and Dr. Arthur M. Mendenhall, Professor of Obstetrics, who spoke on "Newer Things in Obstetrics," met with a tragic death on their return to Indiana by aeroplane after attending the clinic. Dr. Mendenhall's daughter, who was a journalist associated with a Richmond, Indiana, paper accompanied her father. On the return trip by plane an endeavor was made to land at Richmond, where the daughter was employed. The airport was not lighted so that in hunting a place to land the plane encountered a tree which tore off one of the wings and caused it to "nose" down an embankment where it caught fire. The impression was that none of them realized what had happened, since death must have been instantaneous. Dr. Mendenhall leaves a widow and two sons.

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Mr. William Burns, executive secretary of the Wayne County Medical Society, has been invited to address the Annual Secretaries' Conference of the Indiana State Medical Society, January 27, 1935. The Secretaries' Conference will be held at the Lincoln Hotel, Indianapolis. In a letter from executive secretary Hendricks to Mr. Burns he writes: "This year Albert G. Milbank, chairman of the Board of Trustees of the Milbank Memorial Fun, New York; Doctor Oliver J. Fay, chairman of the Board of Trustees of the Iowa State Medical Society; Dr. Harvey Cushing, chairman of the Advisory Board on Medicine of the Committee on Economic Security appointed by the President, and you are invited as our guest speakers. We would like to have you speak for not more than thirty minutes upon the Detroit Plan."

* * *

The officers of the Michigan Association of Roentgenologists for the ensuing year are: president, Dr. V. M. Moore, Grand Rapids; vice president, Dr. C. S. Davenport, Lansing; secretary-treasurer, Dr. S. W. Donaldson of Ann Arbor. The Committee on Economics is as follows: Drs. John B. Jackson, Kalamazoo, chairman; Leland Holly, Muskegon; Lawrence Reynolds, Detroit; Alden Williams, Grand Rapids; W. O. Upson, Battle Creek; Carleton B. Peirce, Ann Arbor. The Educational Committee consists of Drs. Rollin Stevens, Detroit, chairman; J. H. Dempster, Detroit; William Clift, Flint; Howard P. Doub, Detroit; F. J. Hodges, Ann Arbor; A. W. Crane, Kalamazoo. The association has a membership of sixty-eight.

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The Beaumont Foundation Lectures given annually under the auspices of the Wayne County Medical Society will be held on February the fourth and fifth at the Art Institute, Detroit. The lectures, two in number, will be given by Dr. Lewellys Franklin Barker of Baltimore, Maryland. Dr. Barker was at one time Professor of Medicine of the Johns Hopkins University. The lectures will deal with the subject of Heredity and Environment as Applied to the Handicapped Child. All members of the Michigan State Medical Society are cordially invited to attend these lectures.

The annual meeting of the Michigan Society of Pathologists met in Ann Arbor Saturday, December the eighth. The subject discussed was "Endometrisis." The annual election of officers took place, resulting in the advancement of Dr. F. W. Hartman of Detroit to the presidency. Dr. G. L. Bond of Grand Rapids was made president-elect, and Dr. W. L. Brosius of Detroit, secretary. The next meeting will be held in February, 1935, together with that of the Detroit Roentgen Ray Society.

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The *Colorado Labor Advocate* contains a tribute to Dr. Newton Wiest of Denver, who has completed a half century of practice. Dr. Wiest was born in New York, eighty-one years ago. He moved with his family to Pontiac, Michigan, where he received his early education, after which he attended the Detroit College of Medicine in 1884. The doctor has been in practice ever since, devoting his major time to obstetrics.

* * *

Dr. Frederick J. Novy has resigned his position as Dean of the Medical School at the University of Michigan as well as Professor of Bacteriology and director of hygienic laboratories of the University. Dr. Novy's period of service extends over forty-eight and a half years. His resignation is due to the fact that he has reached the retirement age of seventy. See editorial, page 39.

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Though a bit late, we have just learned that on September 3, 1934, Dr. William A. LeMire of Escanaba, Secretary of the Delta County Medical Society, was married to Miss Margaret Halligan, daughter of Dr. and Mrs. R. S. Halligan of Flint. We extend congratulations.

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To Dr. David Sugar, editor of the *Detroit Medical News*, is extended the sympathy of his numerous friends in the medical profession over the death of his mother on December the fourteenth.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

RULES FOR RECOVERY FROM PULMONARY TUBERCULOSIS. A Layman's Handbook of Treatment by Lawrason Brown, M.D., Saranac Lake, New York. Sixth Edition, thoroughly revised. Price, $1.75. Lea and Febiger, Philadelphia, 1934.

Perhaps no other disease requires the intelligent coöperation of the patient to a greater extent in its treatment than tuberculosis. In fact, successful management of such cases calls for a clear understanding by the patient of his condition, including his physical limitations, so that he may have as much freedom as possible within those limitations. The contents of Dr. Brown's little book include well seasoned advice on fresh air, rest, diet, food, sleep, climate and twenty-five other topics. The fact that a sixth edition has been called for indicates the reception former editions have met with.

MINOR SURGERY IN GENERAL PRACTICE. By W. Travis Gibb, M.D., Consulting Surgeon, City Hospital and Central and Neurological Hospitals; Formerly Attending Surgeon Workhouse and Penitentiary Hospitals and Hospital for the Aged and Infirm, New York, N. Y. 429 Pages. 148 illustrations. Price $5.00. Paul B. Hoeber, Inc., New York, 1934.

This is the first of a series of manuals for the general practitioner of whose work minor surgery constitutes a very important part. To the graduate entering upon the practice of medicine this work will be found invaluable and to the general practitioner with years of experience it will come as a means of checking up his own methods inasmuch as the work is presumed to embody the results of the best present-day methods. Among the subjects dealt with are Shock, Anesthesia, Hemorrhage, Surgical Infections, Accidental Wounds, Fractures and Dislocations, to mention only a few. The chapter on Radiotherapy gives the reader some idea of the indications and limitations of this method of treatment which, however, should be left to the physician specializing in x-ray and radium therapy.

THAT HEART OF YOURS. By S. Calvin Smith, M.D., Sc.D., 200 pages, three illustrations in color, and three in black and white. Price $2.00. Philadelphia: J. B. Lippincott Company, 1934.

Many books, seeking to make one "take stock of one's physical self" have appeared during the last five years. Dr. Smith's book, "That Heart of Yours," is most timely, due to the great amount of attention given in the lay press and "health columns" to that "great American disease—angina pectoris and arteriosclerosis." Truly the book is a message "of optimism," telling in simple language all about the heart in illness and in health. With the newer understanding of heart affections and with the recent advance of modern methods of study, the once prevalent dread, horror and hopelessness of heart impairment have beaten a hasty retreat and given place to encouragement, confidence and optimism for every "heart afflicted." This little book of 200 pages summarizes present day knowledge of cardiology and should prove an excellent supplement to the information given by the physician to the heart patient, "when time permits and the patient is in a receptive mood."

J. S. B.

DEFINITE DIAGNOSIS IN GENERAL PRACTICE. By W. L. Kitchens, M.D. With a Foreword by John H. Musser, B.S., M.D., F.A.C.P., Professor of Medicine, in The Tulane University of Louisiana School of Medicine. Large Octavo of 1,000 ages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, $10.00 net.

William Osler has said, "To practice Medicine without books is to sail an uncharted sea; without patients is never to have sailed at all." With a given patient, and Dr. Kitchen's book as a guide, one could safely attempt a journey through the treacherous shoals between the Scylla of observation and the Charybdis of deduction, and arrive at the port of satisfactory diagnosis. That the author's threefold purpose—to provide a source of quick reference, to simplify the making of a differential diagnosis, to offer an effective means of applying, the "eliminative" or "selective" method of diagnosis—has been met, is evident with brief use of the book. No attempt has been made to evaluate, through recital of symptoms any of the rare or "not often met with diseases" and the number of symptoms of definite diagnostic significance has been limited to 506 in the 407 diseases listed. To the busy practitioner, the book should prove a boon in the saving of time, referring to monographs and texts. To the teacher, a ready reference to the essentials of diagnosis. To the recent graduate, a recital and valuable "jog to the memory" of all that has been afforded him, in didactic lectures and bedside teaching. The book is a volume of a 1,000 pages, of easy reading print, with wide margins and liberal space for additional notes to be added as the experience of the reader may dictate.

J. S. B.

INTERNAL MEDICINE, ITS THEORY AND PRACTICE, IN CONTRIBUTIONS BY AMERICAN AUTHORS. Edited by John H. Musser, B.S., M.D., F.A.C.P. Professor of Medicine in the Tulane University of Louisiana School of Medicine; Senior Visiting Physician to the Charity Hospital, New Orleans, Louisiana. Second Edition, thoroughly revised. Illustrated. Lea & Febiger, Philadelphia, 1934.

This is a composite work by twenty-six contributors, each of whom is a professor of internal medicine in a leading medical college in this country. Each contributor has been selected for his special knowledge and ability in the department assigned to him. As the reviewer has mentioned, each is a teacher and after all when it comes to medicine and surgery those works that actually teach are of greatest value. In this second edition the collaborators have undertaken extensive revision of the various sections for which they are responsible. The work is a complete single volume treatise on internal medicine, adequately indexed as a handy work of reference. The reader who is disposed to go more deeply into the various subjects is provided with numerous references at the conclusion of each chapter. The sections on treatment are as a rule frank in the assertion where medical treatment is effective and where not.

FOXY FATHER

A father said: "Now, son, start saving the pennies and put them in this yellow box, and when you get five pennies give them to me and I'll give you a nickel and you can put that in this blue box; then, when you get five nickels give them to me and I'll get you a quarter and you can put it in this red box."

Seventeen years later the boy discovered that the red box was the gas meter.—Anon.

OF GENERAL MEDICAL AND SURGICAL INTEREST

CYCLOPROPANE ANESTHESIA

Ralph M. Walters and Erwin R. Schmidt, Madison, Wis., state that induction with cyclopropane has appeared to be quite as pleasant as is that with nitrous oxide, though less rapid with the technic which they have used. Sensations of "ringing in the ears," "fulness" in the head and other unpleasant experiences seem less frequent than with other agents. This is attributed to the complete avoidance of oxygen want from the beginning of inhalation. The ability to induce deep anesthesia without respiratory stimulation, irritation or the possible necessity of producing oxygen want gives the anesthetist a feeling of safety and assurance not experienced with any other agent. Recovery has seemed to be more frequently accompanied by nausea than following nitrous oxide and ethylene. The observation has been made that severe nausea or nausea and emesis have more often followed minor administrations to ambulatory patients than to patients hospitalized for major surgery. Therefore nitrous oxide is considered the agent of choice for minor cases of short duration when suitable. For major surgery the incidence of nausea and emesis is less pronounced than with the other agents in common use. As a preliminary to ether anesthesia, cyclopropane has given satisfaction. The induction is pleasant and the tolerance to ether vapor in the presence of a high oxygen content of the inspired gas makes for a smoother and quicker ether induction. The induction of endotracheal anesthesia is easier with cyclopropane than with ether or ethylene. Endotracheal cyclopropane, with large tubes for "to-and-fro" breathing, is satisfactory for brain, dental and many abdominal cases as well as for plastic work about the head. Except for central nerve surgery, morphine and scopolamine have been used as premedication. In performing thoracoplasty, rib resection for empyema and other operations within or outside the chest, the extremely quiet respiration, ample oxygen supply and quick recovery of the cough reflex have appeared to the anesthetist to offer ideal conditions for this work. Ease of intubation when needed is an added advantage. In the lower part of the abdomen, including all gynecologic procedures through an abdominal incision, satisfaction has been complete for surgeon and anesthetist. For upper abdominal work noticeable defect in the relaxation has been evident in many cases. In the strong muscular type, the rectus muscles are relaxed and breathing is quiet without "forcing" the anesthesia. However, during closure of the wound, the surgeon finds the peritoneal margins retracted under the recti, sometimes causing difficulty in closure. Nitrous oxide is still preferred in the early stages of labor in all cases and throughout in most. A small amount of cyclopropane added to nitrous oxide during second stage pains has been found useful in adding potency for the occasional woman the severity of whose pains is too great to be completely relieved by nitrous oxide. In forceps delivery, version and extraction, and cesarean section, cyclopropane has proved immediately satisfactory in the few cases in which it has been used. (*Journal A. M. A.*, Sept. 29, 1934.)

PRESENT STATUS OF RADIATION IN TREATMENT OF CANCER

Arthur C. Christie, Washington, D. C., points out that since the cause of cancer remains undiscovered, its treatment is still empirical. This is true of radiation as of other methods. It is thoroughly established that the beneficial effects of radiation on malignant growths are due not only to the direct changes produced in the growth itself but equally to the reaction of the surrounding healthy tissues. Methods have been devised in the past few years which constitute an important advance in respect to proper and efficient dosage. Except in superficial cancers in which it is possible to destroy the growth by the caustic effect of radiation, the single massive dose method has been practically abandoned. Progress has taken place also in methods of radium therapy, especially in respect to interstitial radiation. Improvements that have been made in roentgen apparatus in the years immediately past are of importance equal to those made in technic. In an attempt to appraise the present position of radiation in malignant disease, the fact must be kept in mind that results up to the present moment have been obtained over a period of time during which the technic of treatment has been constantly changing. This has been due to new discoveries and inventions of apparatus and to a constantly widening experience. Because of results obtained in large numbers of primarily inoperable and seemingly hopeless conditions and in recurrences after operation, and because of improvement in results when used in addition to surgery, the attitude toward radiation has changed radically during the past three or four years. Under such circumstances of rapidly improving apparatus and technic and with an almost revolutionary change in the type of cases coming under treatment, statistical evaluation of past results has no absolute value. It serves only to indicate trends and possibilities and to point out probable lines of progress. One important consideration in radiotherapy of skin cancer and cancer in any other part of the body is that practically all that is to be done should be accomplished in the first series of treatments. The possibilities of reaction in the surrounding tissues may never again be so favorable after those tissues have suffered the changes produced by irradiation. For this reason it is necessary to plan the initial treatment with the greatest attention to detail and to administer it with meticulous care. It must be realized more fully that radiation therapy of cancer to be efficient is a radical procedure. In spite of the large unconquered field, there is ground for much satisfaction in the improvement that has taken place in the treatment of cancer by irradiation in the years immediately past. The proportion of cures in a number of the most dangerous of the epidermoid cancers has been increased markedly and some that were formerly entirely hopeless now show a substantial number of cures. There is hope also that improvements in roentgen apparatus which permit a better relation between destruction of malignant cells and effects on normal tissues will bring an additional number of cancer cases into the curable range. (*Journal A. M. A.*, Sept. 29, 1934.)